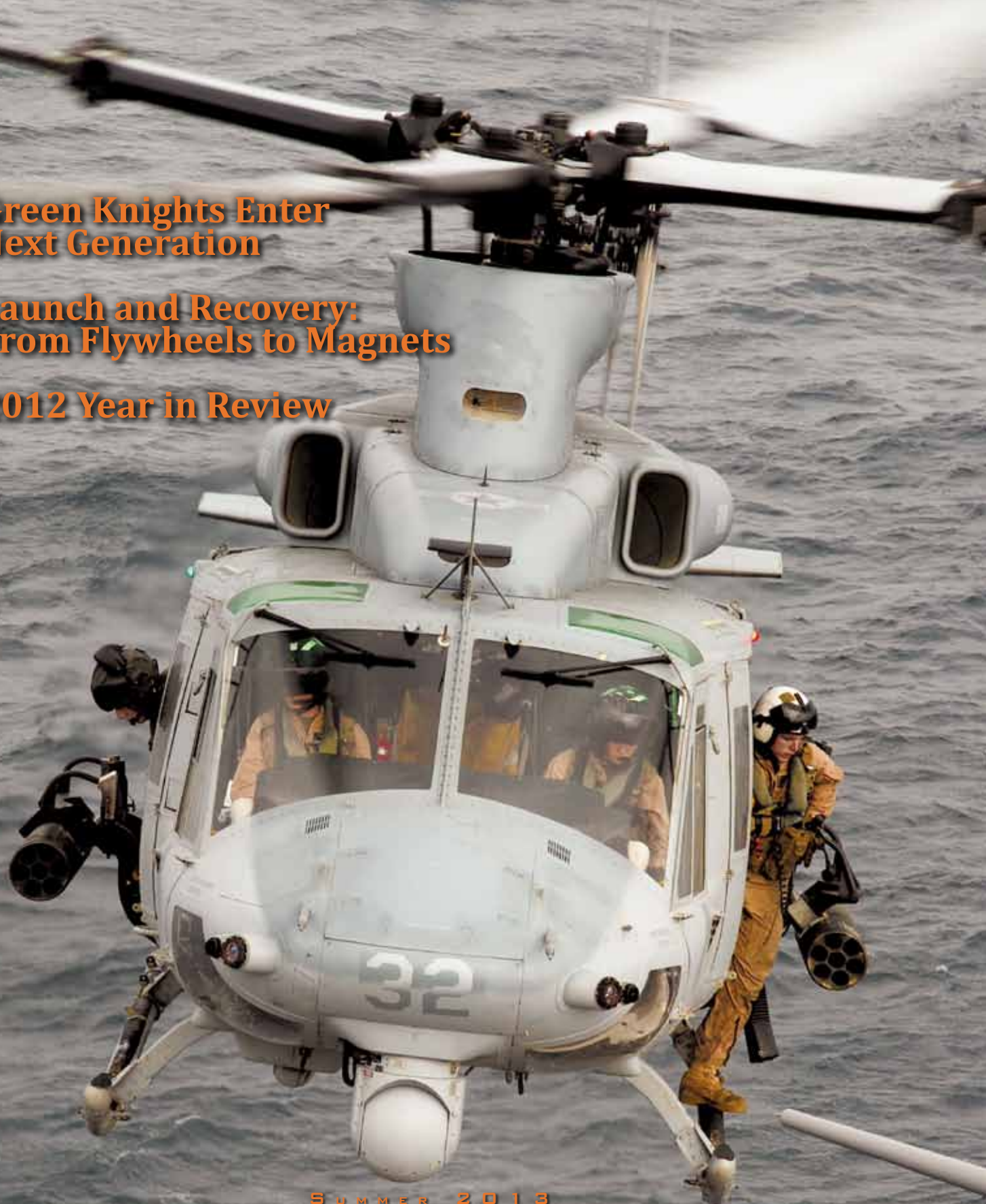


# NAVAL AVIATION NEWS

THE FLAGSHIP PUBLICATION OF NAVAL AVIATION

- Green Knights Enter Next Generation
- Launch and Recovery: From Flywheels to Magnets
- 2012 Year in Review



SUMMER 2013



# NAVAL AVIATION NEWS

Volume 95, No. 3, Summer 2013

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Cover: A UH-1Y Venom with the HMM-364 (Rein) Purple Foxes lands aboard USS Green Bay (LPD 20) during exercise Leading Edge 2013.  
(Photo by MC1 Elizabeth Merriam)

Back cover: Sailors attach an X-47B unmanned combat air system demonstrator to catapult two on the flight deck of USS George H.W. Bush (CVN 77). George H.W. Bush was the first aircraft carrier to catapult launch an unmanned aircraft from its flight deck.  
(Photo by MC2 Timothy Walter)

This page: USS Dwight D. Eisenhower (CVN 69) transits the Atlantic Ocean after operating in the U.S. 5<sup>th</sup> and 6<sup>th</sup> Fleet areas of responsibility.  
(Photo by MC2 Ryan D. McLearn)





# FLIGHTLINE

## Winning Tomorrow's Fight

*Lt. General Robert E. Schmidle Jr., Deputy Commandant for Aviation*

The Navy-Marine Corps team is adjusting to new strategies and new levels of defense investment to build the foundations of collective security through forward presence, crisis response, and regional deterrence. Marine Aviation provides the current and future naval force with flexible platforms including tiltrotor, jet, and helicopter systems specifically designed to operate from amphibious ships. This integrated force forward-deploys where it matters, when it matters—creating options for operational commanders while buying time for national decision makers. Forward presence is an enduring pillar of naval strategy, but the proliferation of threat systems with increased accuracy and range requires new operating concepts. Our future force must operate in all domains, projecting power across the littorals, against an anti-access and area-denial threat and in a contested electromagnetic environment. Marine Aviation is uniquely postured to operate in future anti-access and area denial campaigns because it combines breakthrough technology like the F-35 and V-22 with a warfighting philosophy focused on tempo, knowledge, and scalable firepower. The following program updates highlight Marine Aviation's transition to a future where Marine forces conduct distributed operations to counter enemy capabilities while remaining relevant and forward-deployed today.

By employing the F-35 from both amphibious ships and aircraft carriers, we double the number of ships from which the United States can employ fifth-generation strike aviation and dramatically improve the combat capability of amphibians.

In addition, the B will also be able to operate from distributed bases ashore to complicate the enemy's targeting problem and improve survivability. Both the B STOVL and C carrier variants provide a network-enabled and digitally interoperable aircraft ready for

full-spectrum operations. The first operational F-35B squadron, the VMFA-121 Green Knights, stood up at MCAS Yuma, Ariz., in November 2012. By September of this year, the squadron will have its full complement of 16 aircraft. For the remainder of 2013, we will continue to increase flight operations at MCAS Yuma and Eglin AFB, Fla., while introducing routine operations and building organic maintenance capabilities. The next step is moving F-35B training to MCAS Beaufort in 2014, with initial operational capability in 2015. Marine Aviation is moving forward on the C model as well. The first C was delivered to the Navy's F-35 fleet replacement squadron, VFA-101, at Eglin in June. This squadron will eventually have more than 20 aircraft, 10 specifically for the Marine Corps, to train both pilots and maintenance personnel for the fleet.

Since 2007, the Osprey has flown nearly 160,000 hours and completed 15 overseas deployments. The MV-22 not only performs every legacy helicopter mission profile but adds the range and speed capability of a fixed-wing transport aircraft. We are more than halfway through the MV-22B transition. This year, we are introducing our second squadron of MV-22Bs to Okinawa, while also transitioning the HMX-1's CH-46Es to MV-22Bs. Two reserve squadrons will begin transitioning, one each in FY13 and FY16. We have received 184 of our total 360 aircraft in the program of record. We have a second multiyear procurement in place for an additional 92 MV-22s, increasing the total aircraft to 338 of 360 required. Cost per flight hour continues to decrease as readiness improves; last year it was down nearly 20 percent from previous years. Because of the Osprey's versatility, the Navy is also assessing the aircraft's suitability to replace the C-2A Greyhound. The VMX-22 Argonauts just completed a successful series of flight operations aboard USS *Harry S. Truman* (CVN 75) as part of this military utility assessment. The V-22's unique ability to operate outside normal flight periods illustrates flexibility well beyond traditional carrier onboard delivery aircraft.

The CH-53K, the replacement for the CH-53D and E, provides the Marine Corps with the ability to lift up to

36,000 pounds of external cargo. It is designed to transport 27,000 pounds of external cargo up to 110 nautical miles at speeds of up to 170 knots. This aircraft's unparalleled lift and range under high-temperature, high-altitude, and austere conditions considerably expands commanders' operational reach. The CH-53K incorporates a unique internal cargo system capable of delivering both 463L and standard warehouse pallets. The independent triple-hook external load system delivers three individually tailored resupply loads or equipment such as dual-slung, up-armored humvees, the joint light tactical vehicle, or light armored vehicles to forward-operating bases. While fitting within the same shipboard footprint as the CH-53E, the CH-53K is the only fully-marinated assault support platform that can lift 100 percent of all cargo and equipment intended for aerial transportation in support of Marine air-ground task forces (MAGTF).

By 2020 an all new fleet of upgraded UH-1Ys and AH-1Zs will replace our first-generation Cobras and Hueys that have operated since the Vietnam War. The new combat-proven H-1 series aircraft are expanding the utility helicopter assault support role with better external load transport, small team insertion/extraction, and increased speed, range, and munitions capabilities. Our total buy is 160 UH-1Ys and 189 AH-1Zs, for a total of 349 aircraft. Our 100th aircraft was delivered on 16 January of this year, and the average delivery of H-1s remains approximately 34 days ahead of schedule. Full operational capability for the UH-1Y is expected during the fourth quarter of FY14 and for the AH-1Z in 2020. This all-new fleet provides MAGTFs with more speed, lift, and firepower, and longer range for our power projection mission.

The new KC-130J Hercules extends the reach of MAGTFs with longer range and improved assault support capacity. With increased fuel transfer rate (double that of the T) and longer range, the KC-130J maximizes range and speed. Using the Harvest Hercules Airborne Weapons Kit, the KC-130J provides persistent close air support. Marines, Soldiers, and allies alike have commented on the accuracy, lethality, and extended on-station time of these air-delivered fires. We have procured 48 KC-130Js of the program of record requirement of 79 aircraft.

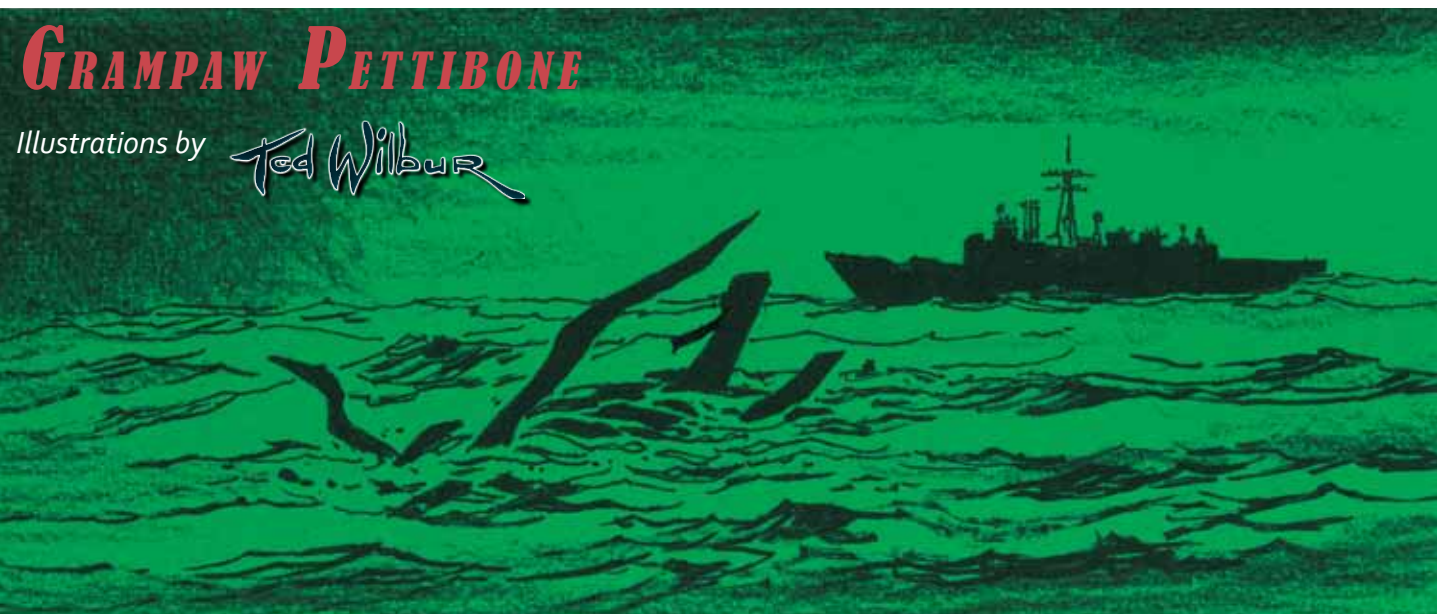
We are breaking new ground with unmanned aerial systems (UAS) by increasing deployment options afloat and implementing new operational concepts. We are testing

RQ-21A Small Tactical UAS integration aboard amphibious ships. We conducted UAS flight operations on USS *Mesa Verde* (LPD 19) and plan to conduct further testing on USS *New York* (LPD 21) in the coming months. Soon LPDs, LHDs, and LHAs equipped to operate as UAS hubs will support operations at sea or spokes deployed ashore during distributed operations. In addition to the progress made with the RQ-21A, we are evaluating follow on options for the RQ-7B Shadow. Recent experience shows that the Shadow utility is limited because of size, weight, and power constraints. Studies are under way to evaluate multiple replacement options, including advanced Group 3 UASs, Group 4 medium-altitude, long-endurance air vehicles similar to the MQ-9 Reaper, high-altitude, long-endurance air vehicles akin to the Boeing Phantom Eye, and fast moving air vehicles with performance similar to modern tactical aircraft.

We are building, testing, and flying more capable aircraft while supporting collective security through forward presence, crisis response, and regional deterrence. Our rotary-wing, tiltrotor, and fixed-wing assault support aircraft are deployed around the world today supporting MAGTF and joint force commanders. Future assault support platforms will move fuel, ordnance, personnel, and supplies farther and faster supporting distributed operations. The F-35B and C and UASs ensure that the joint force maintains technological advantages in strike, electronic warfare, and multi-sensor tactical reconnaissance missions. Each Marine Aviation platform provides a unique capability, but when task organized they constitute the means to achieve strategic and operational objectives. Marine Aviation will continue to build on dispersed aviation and distributed MAGTF concepts through experimentation and operational experience. Our goal is to man, train, and equip Marine Aviation to conduct successful operations in denied environments. To achieve this we are transitioning legacy aircraft, developing innovative operational concepts, and experimenting to identify capabilities that will truly shift the paradigm of warfare.

*The crew of USS Bonhomme Richard (LHD 6) launches landing craft air cushions toward the beach during a beach assault in support of Talisman Saber 2013. (Photo by MC2 Andrew B. Church)*





## GRAMPY PETTIBONE

A helicopter det. had been deployed for one week aboard a frigate engaged in counter-narcotics operations. Because of several factors, including weather and mechanical issues, det. pilots had not completed night vision device (NVD) landing qualifications. On the day of the mishap, the det. planned to perform their qualifications, but higher authority directed the frigate to slide the flight schedule four hours to pursue a contact of interest. At 1400 local time, the det. officer in charge (OIC) held an all air crew meeting to discuss the delay and to cancel the planned NVD qualifications for the evening. He directed all pilots to get some rest.

At 1800, higher authority canceled the helo ops to allow the frigate to maintain a covert posture. The det. OIC discussed this with the ship's commanding officer. Together they contacted the controlling agency and convinced them to allow helo participation. The flight schedule was reinstated with event one scheduled to launch at 2200. The crew on event two reported 600-800-foot ceilings, three miles visibility, overcast skies, light drizzle, and "quite dark."

By the time event three launched, it was 0530 local. On takeoff, the helicopter aircraft commander (HAC), who was also the pilot at the controls, lifted to a hover and transitioned aft. The HAC then turned left in the direction of the relative wind and started to transition to forward flight without the pausing required by NATOPS. Observers reported the aircraft exhibited a nose-down attitude almost immediately after transitioning to forward flight. The helo appeared low and descended slowly during the departure, and it struck the water shortly after takeoff. None of the crew members was recovered.

Post-flight investigation revealed that the HAC had no meaningful period of sleep during the 20 hours prior to takeoff and the co-pilot had no more than three hours in the previous 19.



Grampaw Pettibone says:

**Gol-darnit! Challenging conditions plus crews that ain't fully qualified to use their equipment, plus an overly aggressive posture, is a recipe for a whole lot of badness. Gramps has some thoughts about leadership in this case, but first let's look at the crew. What were them whirlybird boys thinking? Twenty hours without sleep may work when you are getting ready for yer animal husbandry final in college, but it ain't no way to prep for some seriously difficult flying over the great briny at night. Gramps wants our corps of aviators to be hard-charging go-getters, but nothin' whitens my whiskers like bearing yer fangs when they ain't sharp enough to do the job. By all accounts the pilot was a crackerjack aviator yet he failed to follow NATOPS procedures on the takeoff—and that just don't make sense until you find out he was just plain dog tired. Unless the bubble is up and we are in a gut-bustin', mother-loving naval war, someone has to have the sense to say "ENOUGH!"**

**These guys weren't ready for this mission, they were tired and didn't have the ability to use them marvelous night vision thingies we have these days. While Gramps would like to hope them boys would feel comfortable to say "uncle," I also know that really ain't in our nature—and that brings us back to that leadership point.**

**Gramps ain't fond of drugs, druggies, or drug runners, but I gotta question the decision by the OIC and the frigate's Old Man to allow these kids to fly that night. Shoot, even the boss on the beach said they weren't really needed. Taking risk is what we promise to do when we put on the coveted wings of gold, but ain't nowhere it says to take an unnecessary risk. While the captain is always the ultimate decider on his or her ship, that aviator OIC has got to give the skipper wise counsel. In this case it seems to me the wisest course of action was to call it a day and concentrate on getting them kids qualled on them goggles as soon as possible.**

**So let's make a quick school circle and learn a lesson from this tragedy—it's the only good that comes out of these things. For you JOs, you got to know when you are at your limit and let someone know about it. And if you are ever placed in a position where you are responsible for the lives of others, make good decisions by weighing the importance of the mission against the risks you are taking. Now you kids go skedaddle and get back to work, Gramps is gonna go clean my shotgun for tomorrow's dove hunt.**

## Gramps from Yesteryear...

### FELINE AIRLINE

"Perform condition four checks," the pilot in command of the P-3A aircraft instructed his crew following an uneventful preflight and takeoff on a routine training mission. While the crew was checking to ensure there were no fumes in the aircraft, a large domestic cat emerged from the galley and dashed forward toward the cockpit. An alert crewman, seated aft of the copilot, spotted the cat and made two valiant attempts to block the cat from entering the cockpit.

The frenzied feline, undaunted by the two frantic forearm swats, made a third and this time successful attempt to claw its way into the cockpit. On this pass, the cat pounced upon the crewman's Nomex-covered right forearm and immediately commenced to rearrange the order of his epidermis.

The pilot became aware of the ensuing struggle when the observer emitted a bloody scream as he pried the clawing cat loose and flung it to the deck. Landing feet first, as always, the tenacious kitty quickly sidestepped the crewman, ducked under the copilot's seat, and then disappeared under the decking forward of the copilot's rudder pedals. The pilot, taking stock of the situation, aborted the mission, returned to home base, and obtained medical attention for his clawed crewman.

After an exhaustive internal postflight search, the aircraft was sealed and bait set out to entice the cat out of hiding. After a short wait, the ground crew dismantled several sections of the aircraft flooring. The cat, along with two

kittens, seven to 10 days old, discovered nesting beneath the cockpit deck area, were corralled and placed in precautionary rabies quarantine.



Grampaw Pettibone says:

**Holy flying feline ferocities! This aerial Clyde Beatty act sounds more like a "Nine-Lives Eveready Battery" commercial than a normal air crew training mission.**

**Old Sagebrushface here was intrigued and amused with this event, but had some difficulty sorting out all the lessons learned. Some of the more apparent ones seem to be:**

1. A thorough preflight doesn't guarantee that all is bliss. One should be prepared for the unexpected, even a meow or a hiss.
2. "Purring" can emanate from sources other than finely tuned engines.
3. The galley cat's entry into the aircraft is a bit of a mystery. However, the cat's reaction and attack on the crewman is no mystery. It's not wise to fool with Mother Nature or Momma Cats, either.
4. Nomex is fire retardant but not

**feline resistant, and is a poor substitute for armor plating during aerial cat attacks.**

**5. Last, but not least, I suppose we should add to the age-old saying that the flight is not over 'til the paperwork is complete, "and you put the cat out!"**

**In summary, the crew's reaction to the unexpected in-flight incident was as expected: professional! The decision to abort the flight and put the cat out was indeed wise. This kitty had at least 40 lives at stake: the 13 P-3 crewmen, her nine, and nine for each of the two kittens. Had any one of the latter 27 lives become entangled in the flight controls, the lives of the other 13 would surely have been in jeopardy.**

*(Originally published in November 1982)*





The X-47B made Naval Aviation history with its successful launch from the deck of USS George H. W. Bush (CVN 77) off the coast of Virginia on 14 May. Two months later, the aircraft made its first landing. In both cases, it was the first in history with an aircraft made without a human at the controls. (Photo by MC2 Timothy Walter)

## X-47 CATAPULTS INTO HISTORY

Heralded by many observers as an event akin to Eugene Ely's historic flight from a temporary deck built on the light cruiser USS *Birmingham* (CL 2) in 1910, the X-47B unmanned combat air system demonstrator ensured its place in Naval Aviation history on 14 May when it became the first aircraft to be launched from a carrier at sea without a human at the controls. After months of preliminary catapult tests ashore and taxiing tests at sea, the X-47B made its historic launch from the deck of USS *George H. W. Bush* (CVN 77) off the coast of Virginia and then landed at NAS Patuxent River after a flight of just over an hour. Two months later, the aircraft made history again when it landed aboard the same carrier, completing the most difficult task for a new carrier aircraft.

"It isn't very often you get a glimpse of the future. Today, those of us aboard USS *George H. W. Bush* got that chance as we witnessed the X-47B make its first ever arrested landing aboard an aircraft carrier," said Secretary of the Navy Ray Mabus on 10 July. "The operational unmanned aircraft soon to be developed have the opportunity to radically change the way presence and combat power are delivered from our aircraft carriers." The Navy has begun a design review for a fleet version of the unmanned carrier launched

airborne surveillance and strike (UCLASS) aircraft that will incorporate the lessons learned from the X-47B.

## FLEET GETS FIRST F-35C



VFA-101 pilot Lt. Cmdr. Christopher Tabert lands his F-35C Lightning II at Eglin AFB, Fla., on 22 June. The squadron is the first to receive the carrier variant of the aircraft. (Photo by Maj. Karen Roganov)

The VFA-101 Grim Reapers received the first F-35C Lightning II on 22 June at a ceremony at Eglin AFB, Fla. The aircraft is the first production version of the carrier variant of the Joint Strike Fighter. The squadron, which served for more than five decades flying mostly F-4s and F-14s, was reactivated in 2012 to serve as the fleet replacement squadron for the C variant.



The X-47B completes an arrested landing on the flight deck of USS George H.W. Bush (CVN 77) on 10 July. (Photo courtesy of Northrop Grumman by Alan Radecki)

## MAGICIANS REAPPEAR

The integration of unmanned systems into the fleet continued as the Navy established the HSM-35 Magicians, the first hybrid squadron of manned and unmanned helicopters, at NAS North Island, Calif., on 3 May. The Magicians continue the lineage of HSL-35, which was disestablished more than 20 years ago. The new squadron will fly both the MH-60R Seahawk and the MQ-8B Fire Scout and provide mixed dets. for littoral combat ships.

## MARINES TO TAKE OVER PROWLER TRAINING

The VMAQ-1 Banshees was redesignated VMAQT-1 on 14 June, marking the beginning of the transfer of training duties for the EA-6B Prowler from the Navy to the Marine Corps. The squadron, based at MCAS Cherry Point, N.C., will train all Marine Corps aviators destined to fly in the Prowler until the aircraft is phased out of Corps service in 2019. VAQ-129, which previously had been the sole squadron training both Navy and Marine Corps pilots and air crews, will continue to train Navy personnel until the Prowler leaves Navy service in 2015. One of four expeditionary tactical electronic warfare squadrons, VMAQ-1 was originally established in Korea as VMC-1 in 1952 and later served in Vietnam as VMCJ-1.



AWSC Jay Okonek (back) and AWS1 Jason Blase, with the HSC-3 Merlins, pick up water with a "Bambi" bucket to fight a fire near base housing at Point Mugu, Calif., on 3 May. Three MH-60Ss from HSC-3 and HSC-21 helped fight fires in Ventura County at the beginning of May. According to the National Interagency Fire Center, the first six months of 2013 saw more than 23,000 wildfires throughout the United States that burned more than 1.8 million acres. (Photo by MC1 Chris Fahey)



# —THE GREEN KNIGHTS—

## ENTER THE NEXT GENERATION



Text and photos by Rick Llinares

The VMFA-121 Green Knights are the Marine Corps' first operational squadron to fly the F-35B Lightning II. The new aircraft replaces the venerable F/A-18D. Photographer Rick Llinares shares some of his past photos of the squadron and his conversations with some of its personnel. (Photo by Cpl. Ken Kalemkarian)

“Today is a historic day for our Corps as we mark yet another milestone in the development of the F-35,” said Marine Corps Commandant Gen. James F. Amos at the VMFA-121 Green Knights re-designation ceremony on 20 November 2012, when the squadron officially became the first operator of the F-35B Lightning II. “The Marines before you are on the cutting edge of aviation history. This squadron will be the first, not only in the Marine Corps or the United States, but the first in the world to bring a fifth-generation multirole STOVL [short take-off and vertical landing] stealth fighter, and its unique and highly advanced capabilities, into an operational status.”



Also known as the Joint Strike Fighter, the F-35B is replacing three separate platforms currently in use in the Marine Corps: the AV-8B Harrier II, EA-6B Prowler, and F/A-18D Hornet (the Green Knights' previous ride). The Lightning II reifies the Corps' long-term strategy of reducing the service's airframes without sacrificing capabilities, and replacing all its aircraft by 2025. Variants are also replacing a variety of current platforms within the Air Force and Navy as well.

This first of a two-part feature on the squadron focuses on the unit's rich history and its activities leading up to and including the recent transition from the Hornet to

the Lightning II. *Naval Aviation News* was given the opportunity to speak with some of the squadron's former and current officers.

The Green Knights' lineage traces back to World War II when Marine Fighting Squadron (VMF) 121 was activated in June 1941. Flying F4F Wildcat and F4U Corsair fighters, the Green Knights took part in the Solomons Island campaign and the battle of Peleliu. The unit produced more aces (14) than any other U.S. squadron. Deactivated after the war, the unit was re-activated as VMA-121 and participated in the Korean War while flying the AD-2 Skyraider. The unit entered the jet age with the Grumman F9F-8 Cougar. As

the 1950s came to a close, the unit upgraded once again to the new A-4 Skyhawk, which the squadron took into the hostile skies over Vietnam from 1966 to 1969. The unit was re-designated VMA(AW)-121 to reflect their all-weather attack mission after switching to the new Grumman A-6E Intruder. In 1989, the unit became the first Marine Corps unit to receive the fourth-generation F/A-18D Hornet. The unit was re-designated VMFA(AW)-121 and participated in Operations Desert Storm/Shield just one year later.

“We have used the F/A-18D first in combat during Desert Storm, and were the first F/A-18D squadron to deploy to

an expeditionary airfield in support of Operation Enduring Freedom,” said Maj. Gregory Summa, the squadron's executive officer. “Fifteen months later the squadron deployed for Operation Iraqi Freedom. In all of these conflicts the ability of the F/A-18D pilots and WSOs [weapon system officers] to brief and communicate with each other at a centralized expeditionary airfield enabled them to have the most up to date intelligence on the enemy's activities and support the ground commander as the battle space changed.”

The actual process of retiring the Hornet and transitioning to the Lightning II took place much more quickly than anticipated. “We were notified in January 2012—three weeks into our deployment—that we'd be transitioning the squadron from Hornets to the F-35B sometime in September of the same year,” said Lt. Col. Michael Waterman, former commanding officer of VMFA(AW)-121. “On paper it's a 24-month process. From the time we were notified to the prospective transition date we had eight months. Five of those eight months remaining until the slated transition date ticked down while we were still fully engaged in operations while attached to MAG-12 on our deployment to the Western Pacific.”

The speed of the transition posed a very real threat to the squadron's morale and its ability to accomplish its mission. “So, how did we do it? We kept the ‘main thing’ the ‘main thing,’” said Waterman. “That main thing was maintaining and demonstrating readiness while accomplishing our current mission as part of MAG-12. That was priority number one”

Since the move also involved changing the squadron's base from MCAS Miramar, Calif., to MCAS Yuma, Ariz., the second priority was ensuring the successful transition of the squadron's personnel by finding homes for everyone. The third priority was transferring aircraft and equipment.

“Last, but certainly not least, our fourth priority was an appropriate ceremony to mark the close of an era,” said Waterman. “We did the first part of that in Miramar with the help of The Flying Leatherneck Museum. They provided a number of vintage aircraft, some of which my Marines helped to restore, for the change of command ceremony/reception that showcased some of the airframes 121 had flown since its inception.” Despite many challenges, the transition was a success.

The last two years have been a busy time for the Green Knights. In early November 2011, the unit flew Amos aboard USS *Ronald Reagan* (CVN 76) in aircraft VK01 for VMFA-323's Marine Corps birthday celebration. Four months later the Green Knights became the first Marine F/A-18D squadron to complete the Navy's Strike Fighter







Advanced Readiness Program while deploying to NAS Fallon, Nev., NAS Lemoore, Calif., and NAS Key West, Fla.

In January 2012, the Green Knights accepted their final three F/A-18Ds (taken from VMFA(AW)-225) for their full complement of 12 aircraft and deployed 10 days early to MCAS Kaneohe Bay, Hawaii, to begin what was to be their final Western Pacific deployment in the Hornet. On 16 January, the squadron was informed it would transition to the F-35B by the end of September. The last week of January saw the squadron move from Kaneohe to MCAS Iwakuni, Japan. January's close saw the squadron fly a monthly total of 245 sorties for 568.5 hours, the highest monthly flight hour total the squadron had seen since 2007 Operation Iraqi Freedom combat operations.

In April, exercise Foal Eagle provided invaluable experience for air crews and maintainers as the squadron supported a demanding operations tempo over the Korean peninsula in adverse weather. In Kunsan, the squadron generated a low-cost, four-plane unit level training det. to further flight leadership training. Deemed exercise "Wolf Raider," flight leads and combat wingmen under instruction gained



valuable air combat maneuvering experience against U.S. Air Force F-16s. "All the while, squadron maintenance reset a flat aircraft phase trajectory in preparation for MAG-12's upcoming exercise in Guam," said Waterman. "We executed 108 sorties during a 72-hour surge event without dropping a single scheduled sortie."

In mid-July the squadron redeployed from Iwakuni to Miramar to continue the business of transition. In August and September, VMFA(AW)-121 transferred its remaining aircraft, equipment, and personnel; executed a change of command; and relocated squadron colors and heritage items from Miramar to its new home at Yuma.

Current VMFA-121 commanding officer Lt. Col. Jeffrey

Scott, who took command of the unit shortly before its transition, essentially took over a squadron with no aircraft. Waterman oversaw the transfer of all the squadron's F/A-18Ds before Scott assumed command.

"We started as a detachment of Marine Aircraft Group 13 with a core cadre of Marines who would become the core of our maintenance department on the aircraft and eventually the trainers," Scott said. "We didn't have a building or any aircraft at first and everyone had come from legacy platforms from various squadrons."

The squadron received its first new jet and was re-designated VMFA-121 in November 2012. The squadron did not have an existing structure of personnel, who were patched together with Marines from all over even as there were other Marines and pilots coming and going to get trained on the aircraft.

"Most commanders are very experienced in the platform their squadron flies; in this case I had a lot of experience, but none with the F-35," admitted Scott. "I had to attend training to fly the F-35B in Eglin AFB, and continue to



command procedures were developed to bridge those gaps," said Scott. "Many of the processes normally in place for an aircraft were not in place, since we were the first F-35 squadron ever not to rely on the manufacturer to manage and conduct the maintenance on the aircraft."



build my knowledge of the aircraft, just as our Marines have been doing on the maintenance side. Aside from being away as a commander for a few months, I ended up spending more time in the simulator and book learning this jet than many commanders simply to build experience. We are still growing at the rate the schoolhouse can produce trained maintainers and pilots. We stood up the squadron and completed a thorough maintenance inspection, as well as our administrative programs with limited personnel on hand."

The F-35B was purchased as part of a joint and international program, but how it was purchased did not exactly match existing Naval Aviation maintenance programs. "It was through the hard work of the Marines that the local

Scott has been pleased with the progress the squadron has made and the challenges it has overcome before, during, and after the transition. "Everyone from my parent MAG-13, 3<sup>rd</sup> Marine Aircraft Wing, Headquarters Marine Corps, and Marine Corps Air Station Yuma have done an outstanding job to support the squadron's stand up of this aircraft and the maintenance for this fifth-generation stealth fighter." ✈️

*Rick Llinares's photography has appeared in multiple publications, including Naval Aviation News. The author would like to express his sincere appreciation to the following people for their tremendous support with this feature: Lt. Col. Jeffrey Scott, Lt. Col. Michael Waterman, Maj. Gregory Summa, Capt. Staci Reidinger, 1st Lt. Kathryn Whichard, and 1st Lt. Chad Hill.*



# JUST ONE MORE FLIGHT

By Lt. Chaz Nelson, USN



Just hours away from a port visit to Manila, an air crew with HSL-51 took off from USS McCampbell (DDG 85) for a routine surveillance, search, and control mission that turned into a rescue at sea.  
(Photo by MC3 Paul Kelly)

It was 23 October 2012, three weeks after USS *McCampbell*'s (DDG 85) visit to Port Klang, Malaysia. We would be pulling into Manila for a four-day visit the next morning. The whole crew—Lt. Rocky Gutierrez, AWR3 Stanislav Oros, and myself—were eager to complete this flight. By the time we would land, eat, and finish our post-flight duties, the ship would be almost pierside.

At 1930 we convened for the brief. Focus had shifted during the day from nightly surveillance, search, and control (SSC) operations to the pop-up task of delivering a bag of life rafts to the air det. aboard USS *Shiloh* (CG 67). The first three hours of the flight would be purely SSC to give *Shiloh* time to close *McCampbell*. The second half of the double-bag would be an approximately 120-mile transit to transfer the life rafts before we could return and finally get excited about liberty. As we neared the Philippines, the density of the small fishing vessels floating in pairs on the South China Sea had increased tenfold. Looking through night vision goggles there would be dozens of bright lights, so we had to rely on the forward-looking infrared (FLIR) sensor to get a good visual on the contacts.

At our 2200 launch time everything was going smoothly. We went ahead and loaded the life rafts early in case *Shiloh* was closer than briefed. We launched into a night of clear weather, calm seas, and illumination dim enough you could not make out the surface of the ocean with the naked eye. Our primary tactic to ensure full coverage was to start at the northern part of our sector and fly east-west and snake our way down each row of radar contacts. This way we would be able to pick up any smaller contacts that did not show on radar.

The most common contacts in the area were trimarans. Some of them looked like canoes with outriggers on both sides, while others looked much more suited to fishing operations 50 miles from shore. As we picked up the first boat on FLIR, we noticed what appeared to be a bait box attached by a rope floating about 50 feet behind the boat. Some of the boats had a flashlight that they would shine at us; they were lit in accordance to navigation rules. Some were not lit at all, but we would come on their radar signature and find them on FLIR.

About one hour into the flight, Oros mentioned he smelled something burning. After a quick check to make sure the aircraft was not going to turn into a fireball over the Philippines, we concluded we were smelling the beginnings of four days worth of tasty Filipino food. It was just strange to smell it so far from shore.

We had reached the eastern-most edge of our sector and set up for a straight line of four contacts. Oros noticed a waving light directly between two of the contacts in a void radar return. He immediately slewed the FLIR in that direction.

“This boat looks like it’s sitting really low in the water,” Oros said, “and it looks like they are waving us down.”

I pulled up his screen and saw a typical fishing trimaran, except there was very little freeboard. It was unlit except for what appeared to be a tiki torch on top of the vessel. We hadn’t found tasty food—we’d found mariners who appeared to be in distress.



Five Filipino fisherman receive medical evaluations aboard *McCampbell* after being rescued from their foundering vessel in the South China Sea.  
(Photo by John McWhorter)

Gutierrez immediately went into helicopter aircraft commander mode. “Chaz, get on the mission change checklist,” he grunted as he strained to look out the right window as we came around for a second look. It was 2330 and we had 2,500 pounds of fuel, enough for another 1.5 hours until our “red light.” We descended to 200 feet to get a better look at the people standing on top of the vessel, who appeared to be even with the height of the outrig floats. It was clear the vessel was sinking.

We relayed what we saw to the anti-submarine/anti-surface warfare tactical air controller and requested that our air boss, Lt. Cmdr. Matthew Cole, come down to Combat immediately. Since we were sure we had a real search-and-rescue mission on our hands, we conducted our checklist and set our bingo fuel to get back to *McCampbell*, which

was 20 miles away. We had enough for two hours at max conserve until splash, less than that in the hover. We would be checking off station with enough to head for a landing with Green Deck or with 30 minutes of fuel if we did not have it. Oros deployed a MK-58 marine marker in case their light went out.

We were ready to relay the picture of what we were seeing to the ship, so our next move was to complete the automatic approach checklist and come into a coupled hover at 80 feet beside the vessel. “Sir, we can get back to Mom, pick up a swimmer, and be back on station in less than 30 minutes,” Oros suggested. We relayed his suggestion down Hawklink. “Standby guys, the ship is requesting to break sector to head your way at full speed,” said Cole “Remain on station and make sure the situation doesn’t deteriorate.” Back on *McCampbell*, AWR1 Thomas Rowley and AWR3 Bryce Hawley had been fetched from their racks and dressed out for search and rescue, one for the aircraft and one to assist with a boat rescue.



Several days after the rescue, Lt. Chaz Nelson (left) shows the inside of an SH-60B Seahawk to pilots of the Republic of Philippines navy during a tour of *McCampbell*.  
(Photo by MCSN Declan Barnes)

We estimated it would be about an hour until *McCampbell* was on station. Another helicopter on USS *George Washington* (CVN 73) about 30 miles away had been notified and was getting ready to launch. Our next concern was to ensure the survivors were safe while we determined the rescue method. There were three options on the table: our aircraft could fly back to *McCampbell*, pick up a rescue swimmer, and rescue what we had determined to be five individuals; HS-14 aboard *George Washington* could perform the rescue once they arrived on scene; or *McCampbell* could perform the rescue by small boat. Being only 20 miles from the scene (approximately one hour out) in a situation where there was no imminent danger to the fishermen with us standing by in case their vessel sank, the rigid-hull inflatable boat (RHIB) was deemed the best asset.



Our next thought was to get life rafts in the water to aid the fishermen should the situation get worse. Fortunately, because we were flying with the additional life rafts for *Shiloh* (10 in all), we had enough for the survivors as well as our crew should we need to ditch. We wanted to place the rafts precisely upwind of the vessel so they could only get closer to the crew.

We dialed our coupled hover down to 40 feet and Oros deployed the first life raft. The raft inflated and was immediately caught in the rotor wash, flying wildly out of reach. It continued to blow further away as we added power to come back to 80 feet. We illuminated the life raft with the searchlight so the fishermen could see that we were deploying aid. It seemed the sea anchor was doing its job. We knew the NWP 3-50 said to deploy in a 10/10 creep or a 15-foot hover, but that was for the larger multi-person life rafts. These were single-person LR-1s. As Oros deployed a second raft and the lanyard broke away to shoot the cartridge, nothing happened and the raft fell into the ocean. Since we were holding the *Shiloh* air det.'s life rafts we had eight more rafts to give; if we used five we would still have enough for the crew in case of a ditch. The next raft we deployed at 40 feet. We used the rotor wash to steer the raft to the boat before the sea anchor got a good hold. The fourth and final raft we deployed at 80 feet and it landed exactly where we intended.

The survivors on the ship had continued to wave their torch as we were hovering close aboard. Approximately five minutes passed between first spotting them to deploying the first life raft. It took another 10 minutes until we had the two functioning life rafts that we dropped close by in the water. From the FLIR imagery we could pick out five survivors standing on the vessel. Some of them were waving along with the torch bearer.

After the first raft was in the water we watched as one survivor was secured to the ship with a rope and swam the 20 yards to hop in the raft as the others retrieved him. They did the same maneuver with the last raft. The crew of the sinking vessel pulled the rafts onto the top of the boat, which was now resting approximately sea level and held up only by the buoyancy of the outrig floats.

At 0030 we asked again if we could come back for a swimmer. We were told the helicopter on *George Washington* was spinning up to relieve us. We had 30 minutes until we reached our red light. *McCampbell* was on station and in the process of lowering two RHIBs into the water. The HS-14 helicopter, Lightning 623, arrived on station ready with swimmers. Of immediate concern was illuminating the survivors so the RHIBs could perform the rescue. The rescue crew on the boats did not have night goggles and would not be able to see Lightning 623's infrared searchlight, so hover lights were the immediate substitute.

"Will you guys be ready to recover us in the next few minutes?" said Gutierrez over Hawklark. "Currently conducting RHIB ops," was the reply. The back of the ship was lit up like Christmas with searchlights on the starboard side of the ship illuminated for RHIB launching. The second RHIB pulled away and the lights dimmed enough for us to continue to land once we got our Green Deck.

We landed with 700 pounds of fuel in the tanks. If we had gone any lower we were ready to divert to the carrier for fuel as RHIB ops were a hindrance. Lightning 623 stayed on station to illuminate the rescue. The RHIB team recovered all five mariners, some of them leaping into the water before the boat arrived. It turns out the survivors had set out for Yellowfin tuna five days before; earlier in the night they had begun to take on water. They were taken

## Warlords Assist with Operation Guardian

By Lt. Jeff Matthews, USN

On 17 January 2013, USS Guardian (MCM 5) ran aground on Tubbataha Reef, approximately 85 miles southeast of the island of Palawan in the Philippines. Originally designated as the Philippines' first national marine park in 1988, Tubbataha Reef is now a protected marine sanctuary and a United Nations World Heritage Site. Fortunately, none of the ship's 79 crew members were seriously injured in the grounding.

Guardian was heading to Indonesia after leaving a port call in Subic Bay. At the time of the grounding, USS Mustin (DDG 89) was en route to Pattaya, Thailand. Mustin and HSL-51 Det. 6 got the call to help out their shipmates stranded on the reef.

On 20 January, Det. 6 arrived at the scene of the grounding along with USNS Bowditch (T-AGS 62), USNS Salvor (T-ARS 52), and Malaysian tug Vos Apollo. Rear Adm. Thomas Carney, commander of Navy Logistics Group Western Pacific, embarked on Mustin along with the supervisor of salvage and commander of Mobile Diving and Salvage Unit 1 to oversee Operation Guardian. As the flagship, Mustin oversaw the successful transfer of Guardian's ammunition, classified materials, and hazardous materials.

Det. 6 was given an operational task despite being in the middle of completing ship-helicopter training. The waiver process was quickly completed, and the SH-60B det. conducted aerial reconnaissance of the scene and personnel transfers on the first day. The maintenance team ensured the helicopter was always ready, achieving a 100-percent sortie completion rate.

The Det. 6 Spartans contributed 40.6 hours in support of Operation Guardian. The synchronization of the maintainers and air crew enabled the det. to maintain a high state of readiness in support of the dangerous evolutions on Guardian. The det.'s aviation warfare



Malaysian tug Vos Apollo assists with the salvage of USS Guardian (MCM 5) in late January. A det. from HSM-51 spent several weeks supporting the salvage effort. (Photo by AWR3 Geoffrey Trudell)

systems operators, AWR2 Douglas Bliss and AWR3 Geoffrey Trudell, provided photographs that were used to monitor environmental impacts and released for publishing by various online sites including CNN and FOX News.

After several weeks of small boat operations, the combined Navy team removed all 15,000 gallons of gasoline, lube oil, and other hazardous materials with no seepage, minimizing the damage to the reef.

On 5 February, Mustin and HSL-51 Det. 6 left Tubbataha Reef and headed to Sasebo to reunite the remaining crew members of Guardian with their families. Det. 6 epitomized the "Semper Gumby" ethos, demonstrating maximum flexibility during Operation Guardian, and maintainers did a phenomenal job keeping the helicopter ready for tasking.

The salvage team completed removal of Guardian on 31 March.

Lt. Matthews serves with HSM-51.

to *McCampbell*, given dry clothes, and then taken off in Manila nine hours later as the ship pulled into port.

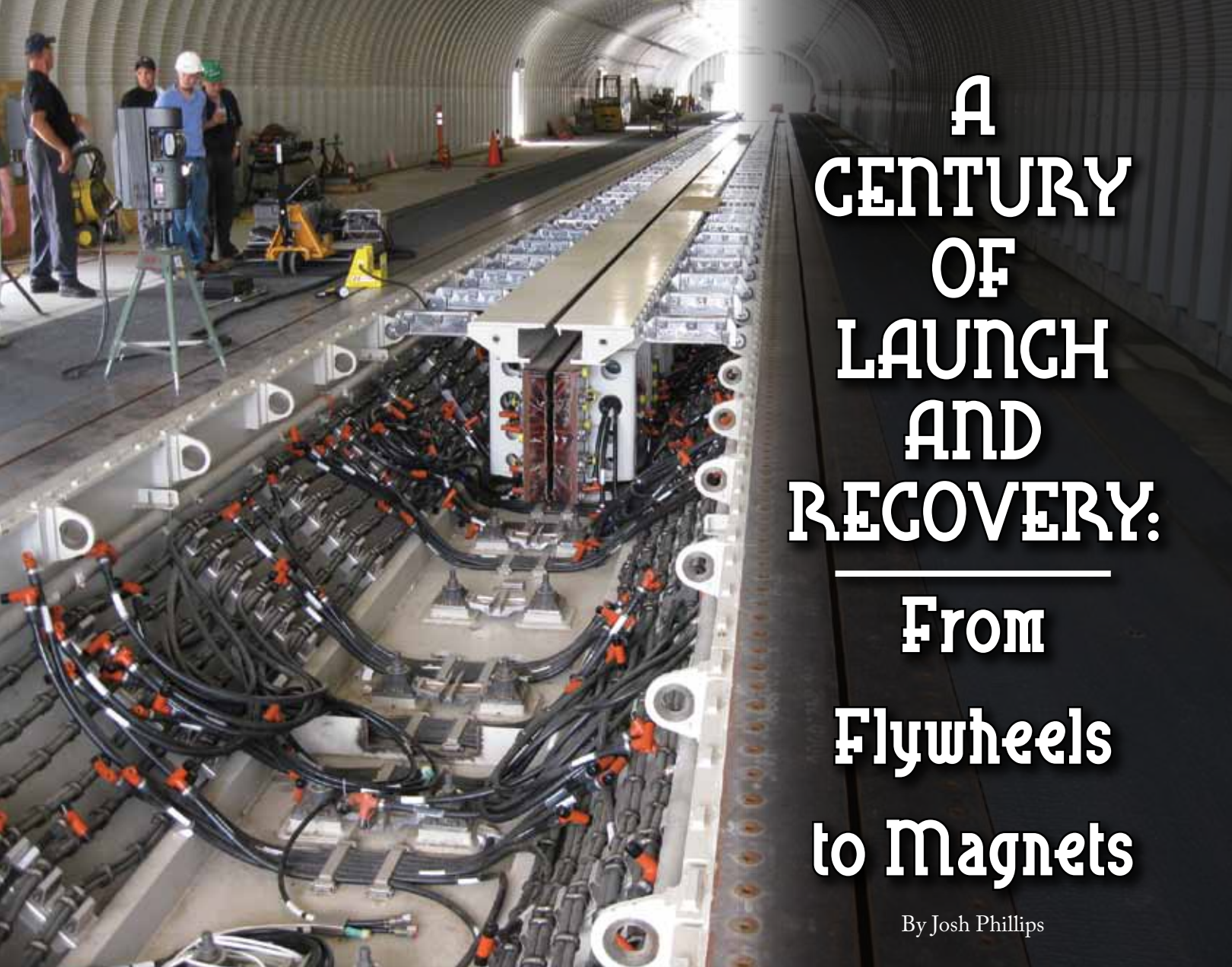
For us, however, the night was not over. We had just deployed four of the five life rafts meant for *Shiloh* so they could be mission capable. Fortunately, HS-14's maintenance officer was in Lightning 623 so we were able to coordinate with him over the radio to acquire a life raft bag from their squadron on the carrier. We finished fueling on *McCampbell*, got an updated position on *Shiloh* (130 miles) and launched to get the life rafts on the carrier. We proceeded north to finish the mission we had started hours before. After adding one hour to our scheduled six-hour mission, we logged our flight complete.

Almost every flight on deployment demands adaptability and flexibility. The mission change checklist set us up for success, reminding us to confirm our change in mission,

set a bingo, and complete other applicable checklists. Once we were at those checklists, we had to alter the set search-and-rescue procedures to perform what became more a rescue and less a search. Deploying the individual life rafts was one way we met our requirement to ensure the survival of the distressed mariners without executing the actual rescue. The coordination of the ship and air team ensured the most suitable platform conducted the rescue. The teamwork and flexibility shown by all players involved was ideal. While SSC can be tedious when it's conducted day after day, you must be prepared at any minute to change the mission and use the procedures you have memorized. 🐉

Lt. Nelson is a pilot with HSM-51 Det. 2 (HSL-51 was redesignated HSM-51 on 7 March 2013).





# A CENTURY OF LAUNCH AND RECOVERY: From Flywheels to Magnets

By Josh Phillips

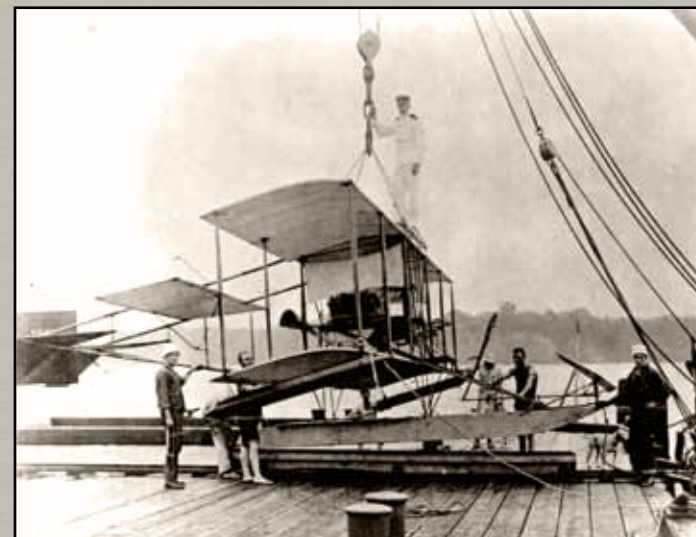
Engineers at Joint Base McGuire-Dix-Lakehurst, N.J., work on the EMALS trough at the System Functional Display site.

In a few years, *Gerald R. Ford* (CVN 78) will enter the fleet as the Navy's newest aircraft carrier, bringing with it a host of new technologies that will make it the most advanced aviation ship afloat. The *Ford* class is designed to increase ship life expectancy and reduce lifetime costs and manpower requirements, with nearly 700 fewer crew members required to man the ship compared to *Nimitz*-class carriers at the time *Ford* began construction. The Navy estimates each ship in the class will save \$4 billion in ownership costs during its 50-year service life compared to the *Nimitz* class. Scheduled to be commissioned in 2016, *Gerald R. Ford* will also utilize the most technologically advanced aircraft launch and recovery systems of any navy in the world, the Electromagnetic Aircraft Launch System (EMALS) and the Advanced Arresting Gear (AAG), which will be able to increase sortie rates by 25 percent over the technology they replace. With the advent of catapults, modern aircraft carriers are capable of launching heavier aircraft designed for distant targets—sending those aircraft from the sea where no permission is required for landing or basing rights.

Naval Aviation began on 14 November 1910, when Eugene Ely launched his Curtiss Model D biplane from USS *Birmingham* (CL 2) without the aid of any launching device—and barely made it into the air. Much has changed since Ely's day: aircraft size, weight, and speed have grown inexorably larger, heavier, and faster. Launch systems have defined and limited the realm of the possible not only for the dimensions of aircraft, but by extension the duration, range, and lethality of sorties as well as the variety of missions that can be flown.

In the next several issues of *Naval Aviation News*, we'll revisit the technologies that have launched and recovered Navy and Marine pilots for nearly a century, while spotlighting EMALS and AAG.

## Early Years (1912-1954)



The Navy's first (unsuccessful) attempt to launch an airplane by catapult came in 1912, when Lt. Theodore G. Ellyson and his A-1 aircraft were thrown into the water at a test facility in Annapolis, Md.

Before the advent of the steam catapult, the U.S. Navy tinkered with multiple technologies for the launching of aircraft from a wide variety of different ships. Early experimentation focused on catapults intended for cruisers and battleships. On 31 July 1912, using a land-based catapult powered by compressed air, Lt. Theodore G. Ellyson conducted the first test of a catapult using an A-1 in Annapolis, Md. The test was unsuccessful; the aircraft was not completely secured to the catapult and became caught



A powder catapult was successfully demonstrated in the launching of an MO-1 observation plane from the forward turret of the battleship USS Mississippi (BB 41) in Bremerton, Wash., on 14 December 1924.

in a cross-wind, crashing into the water. On 12 November 1912, Ellyson tried again with an altered catapult, this time successfully. Three years later, on 5 November 1915, history was made when the first Navy aircraft, an AB-2 flying

boat, piloted by Lt. Cmdr. Henry Mustin made the first catapulted launch from a ship while under way, when it flew off the stern of USS *North Carolina* (ACR 12).

The Navy also experimented with other power sources and models, including catapults that utilized gunpowder and flywheel variations. On 14 December 1924, a Martin MO-1 observation plane flown by Lt. L. C. Hayden was launched from USS *Langley* (CV 1) using a catapult powered by gunpowder. Following this launch, "powder power" was used aboard both cruisers and battleships, although *Langley's* catapults were removed in 1928 because of infrequent use.

The Navy continued to rely on compressed air, gunpowder, and flywheel designs as their mainstay catapult systems, although research was well under way to design a system capable of launching greater numbers of heavier aircraft into



Lt. Cmdr. Henry Mustin, piloting an AB-2 flying boat, makes the first successful catapult launch from a ship while aboard USS *North Carolina* (ACR 12) in Pensacola Bay, Fla., on 5 November 1915

the skies. In 1934, the Navy announced plans for a flush-deck hydraulic system (Type H, Mark 4-1) capable of launching planes from the decks of aircraft carriers. Shortly thereafter, the Bureau of Aeronautics announced that space aboard the carriers USS *Yorktown* (CV 5) and USS *Enterprise* (CV 6) would be reserved for these hydraulic catapults: two for the flight deck and one athwartships on the hangar deck.

Following several years of catapult testing, *Yorktown* and *Enterprise* launched SBC-3 and O3U-3 aircraft from the flight and hangar deck catapults on 4 August 1939. On 16 November 1940, the Bureau of Aeronautics established a catapult procurement program for the entire *Essex*-class of carriers.

After war began in December 1941, hydraulic catapults were little used on the fleet carriers because of the small load capacities of the early designs. According to Lee Pearson in the May-June 1995 *Naval Aviation News*, "In April 1943 *Enterprise* recommended her catapults be removed because





First tested in 1939, hydraulic catapults were installed on the Yorktown- and Essex-class carriers, as well as on all escort carriers. Many of the fleet carriers had hangar-deck catapults, as seen here, that were largely novelties and not widely used.

they were so limited to small, slow airplanes that they were of no use. Instead, they were replaced with updated H2-1 catapults capable of accelerating an 11,000-pound airplane to 70 mph in a 73-foot run.”

Hydraulic catapults were essential, however, for the Navy’s smaller carriers during the war. Escort and light carriers (CVEs and CVLs) needed them to launch aircraft from their shorter decks and to carry the many Army Air Forces aircraft they shuttled to bases throughout the Pacific.

The catapult proved to be an essential piece of the war against the Japanese in the Pacific. As Navy aircraft—such as the mighty Grumman TBF/TBM Avenger torpedo-bomber—grew in size throughout the war, the extra “oomph” of the



Catapults made it possible for the weighty Avenger, such as this TBM, to join the fleet during World War II when the torpedo-bomber’s great size would have otherwise relegated it to land bases.

catapult became necessary to get aircraft into the air with more effective payloads and range. Using the entire deck and the 18 knots of wind, according to an article in the February 1954 edition of *Naval Aviation News*, the TBF was lucky to get airborne without its torpedo. Using the catapult, the

TBF could carry its torpedo plus a full tank of gas.

Following the end of World War II, the Navy looked to improve on all aspects of its current catapult system. While their catapult design was fine for launching aircraft such as the Avenger, Grumman F6F Hellcat, and Curtiss SB2C Helldiver, the future of aviation warfare hinged on effectively launching a higher sortie rate of increasingly larger propeller-driven and jet-powered aircraft. The Navy devoted both time and energy into the study of upgrading its catapult system with varying success. Across the sea in Great Britain, however, came the answer.

## Steam Catapults (1945-Present)

Following the war, the Royal Navy was hard at work developing a new catapult system for their fleet of carriers. Cmdr. Colin C. Mitchell, a reservist, recommended a steam-based system as an effective and efficient means to launch the next generation of naval aircraft. According to reminiscences of U.S. Navy Rear Adm. D. K. Weitzenfeld, who served as the assistant director of the ship installations division of the Bureau of Aeronautics in the 1950s, Mitchell’s work on a steam-based catapult system led the way to the U.S. adopting this new technology.

“After the war Mr. Mitchell returned to his shop,” wrote Weitzenfeld. “Using what he called ‘shop assisted engineering’ techniques he worked out in a wood model a design which allowed the slot to open and close without losing any significant energy. He then duplicated this in full scale metal, making and testing one 12-inch cylinder, coverplate and associated hardware. It worked. With this design in hand the Royal Navy went ahead with a full scale catapult to be installed in HMS *Perseus* [R 51].”

The U.S. Navy knew that for carriers to maintain their capabilities, they had to adapt to the size and weight

needs of new aircraft. Soon after the installation of an experimental steam catapult aboard *Perseus* in 1950, the U.S. Navy saw the potential for its own carriers and began a program of its own.

“On 6 August 1951, the CNO accepted an offer from the Royal Navy to send HMS *Perseus* to the U.S. for our test program,” wrote Weitzenfeld. “At that time, the BXS-1 steam catapult in *Perseus* had 890 launches, 105 with live aircraft. At the same time we were in the process of planning the installation of our XC-10 powder catapult (to be replaced by a gas generator) for March 1952.”

*Perseus* arrived in Philadelphia on 20 January 1952 for calibration of its BXS-1 catapult, a developmental model that required 20-minute intervals between aircraft launches. The carrier arrived at Norfolk on 11 February 1952, and went right to work as the steam catapult launched F3Ds, F9F-2s, and F2Hs in succession during the next few days. USS *Eugene A. Greene* (DD 711) supplied steam to the catapult at pressures greater than those used by the British to test the weight limits of the system.

At the end of the testing, more than 140 test launches of dead loads and varying carrier aircraft types were made, further cementing the status of steam as the catapult of choice for U.S. carriers.

According to Weitzenfeld, who was on the carrier at the time of the test launches, the catapult had an immediate impact on those in attendance. “[Commander, Naval Air Force U.S. Atlantic Fleet] Vice Adm. John J. Ballentine, a spectator along with many others turned to Capt. (then Lt.) Russ Reiserer, myself, and the rest of his staff and said ‘I want that steam catapult!’ This thought was carried directly to the CNO by Ballentine when he returned to the office.”

So on 28 April 1952, a few months after the demonstration, the U.S. Navy announced that the British-developed steam catapult would be adopted for U.S. aircraft carriers, with the first installation to be aboard USS *Hancock* (CV 19). *Hancock* was decommissioned after the war but was reclassified as CVA 19 on 1 October 1952. It was recommissioned on 15 February 1954, and became the first carrier in the Navy outfitted with steam catapults capable of launching high-performance jets.

Several months later, the Project Steam test program commenced on *Hancock* as Cmdr. Henry J. Jackson, in an

S2F-1 Tracker, was catapulted in the first operational test of the C-11 steam catapult. A total of 254 launchings were made in June with the S2F, AD-5, F2H-3, F2H-4, FJ-2, F7U-3, and F3D-2 aircraft. With only one aircraft lost during the tests, the experiments proved that the steam catapult was the most effective technology yet to maximize aircraft fuel and ordnance payloads.

Pilots immediately recognized the importance of the new catapult system. “There’s a tremendous difference between the steam catapult and others I’ve been shot off of,” said Lt. Cmdr. Edward L. Feightner, a development officer with VX-3 and World War II ace, in a February 1954 interview with *Naval Aviation News* following the first public demonstration of the steam catapult on 3 December 1953 at the Naval Air Material Center in Philadelphia, Pa. “It’s much better for the pilot. I have never been shot off [a steam] catapult before, so I braced for the shock which never came. I wouldn’t have had to brace my head at all, so easy was the shot.”

With the approval of the fleet and the blessings of its pilots, steam was in. Since then, it has seen duty on every postwar class of U.S. aircraft carrier, from USS *Forrestal* (CV/CVA 59) to USS *George H. W. Bush* (CVN 77), while launching aircraft from Avengers to F-14 Tomcats, F/A-18 Super Hornets, and S-3 Vikings. As the size and weight of naval aircraft continue to increase, however, the Navy believes it sees the future in magnets.



In the early 1950s, the U.S. Navy took advantage of British advancements in steam catapults to conduct their own tests of the new technology. Here, an F7U Cutlass tests a steam catapult at a facility in Philadelphia in 1953.

## The Future

To paraphrase Yogi Berra, it is déjà vu all over again for the Navy. Aircraft with a wider range of sizes, weights, and launching needs are entering the fleet. The F-35 Lightning II will soon replace the venerable F/A-18E/F Super Hornet, both heavy and light unmanned aerial systems such as the X-47B and ScanEagle will occupy space on the flight deck, and a catapult is needed to operate flexibly around these aircraft’s launch requirements while continuing to increase sortie rates.

“Currently, steam catapults are capable of launching today’s carrier aircraft as well as the future F-35C Lightning II and X-47B unmanned aircraft that are not yet operational in the fleet,” said Capt. James Donnelly, program manager for the Navy’s Aircraft Launch and Recovery Equipment



program. “EMALS is designed to launch today’s current air wing as well as all future carrier aircraft platforms in the Navy’s inventory through 2030 with reduced wind-over-the-deck requirements when compared to steam catapults, and additional capability for aircraft growth during the 50-year life of the carrier.”

To that end, the Navy is betting all their chips on EMALS.

EMALS is composed of an energy storage unit, a power conditioning system, and a closed-loop control system. The catapult will also use linear induction motors, which directly produce motion in a straight line, to allow the aircraft to launch at speeds ranging from 55 to 200 knots.

“The Navy has been considering electromagnetic technology since the World War II era,” said George Sulich, the integrated product team lead for EMALS. “It wasn’t until 1982 that a concept feasibility study determined an electromagnetic launcher could successfully be used to

“As the steam catapult system ages, it frequently requires additional personnel to monitor a gauge or tend to maintenance issues,” said Donnelly. “EMALS will monitor its own condition and keep the operator informed of system status, providing information on, and criticality of, any compromised components as well as aid maintainers in troubleshooting down to low-level components. This will permit a significant reduction in the manpower workload required to operate and maintain the system.”

The Navy began technical demonstration contracts with General Atomics and Northrop Grumman Marine Systems in 1999, in an effort to develop potential prototypes for a catapult using electromagnetic energy to replace steam. By 2004, the Navy offered a \$145.6-million systems design and development contract to General Atomics for a full-scale prototype at Joint Base McGuire-Dix-Lakehurst, N.J.

General Atomics was subsequently awarded a not-to-exceed

a result of the contractor’s inexperience managing a major production effort,” he said. “I find that answer unsettling because it is the Navy’s responsibility to oversee what their contractors are doing and to identify problems before they become problems.”

Taylor also had scolded the Navy and General Atomics in 2008 committee hearings, noting that “the Navy requested an additional \$40 million dollars for continued development of EMALS because, and I quote, ‘the contractor underestimated design and production cost.’ The cynic in me would say the contractor purposefully low-balled the bid to get the contract knowing full well the Navy would be forced to pay whatever the true costs of the system turned out to be. Perhaps we should have built another *Nimitz*-class carrier until the research and design for EMALS was complete.”

Although the program was under scrutiny, construction of the full-scale test site continued, testing was well under way, and progress was made. On 3 September 2008, EMALS

still being determined, but given the fiscal climate facing the Navy now and in the future, EMALS technologies must be affordable and reduce the total life-cycle cost over the existing systems,” he said. “These reductions in cost are directly related to the 30-percent reduction goal in the number of operators and maintainers required for the EMALS. Depot-level maintenance associated with EMALS is also expected to be reduced over the life-cycle of the carrier.”

With these tests complete, the full-scale catapult was deemed operational on 13 November 2009 at a ceremony at Lakehurst, and the system began dead-load launching shortly thereafter. On 18 December 2010 the program reached its most meaningful milestone with the historic first launch of an aircraft using an electromagnetic aircraft catapult. An F/A-18E Super Hornet piloted by Lt. Daniel Radocaj of VX-23 took to the skies of eastern New Jersey following EMALS maiden launch.



An E-2D Advanced Hawkeye launches using the Electromagnetic Aircraft Launch System at the full-size shipboard-representative test site at Joint Base McGuire-Dix-Lakehurst, N.J., on 27 September 2011. (Photo by Kelly Schindler)



An F/A-18E Super Hornet makes the maiden launch from the Electromagnetic Aircraft Launch System at Joint Base McGuire-Dix-Lakehurst, N.J., on 18 December 2010.

launch aircraft from a carrier that research and development began on technologies that have evolved into the current EMALS program.”

According to Sulich, EMALS will provide several distinct benefits over its steam predecessor, including a wider energy range that expands the carrier’s capability envelope to accommodate heavier aircraft as well as lighter unmanned air vehicles. EMALS will also allow: increased operational availability because of its electrical and electronic components; a health monitoring system that prevents the catapult from launching if something is wrong; linear motors to launch, brake, and retract the shuttle (instead of the multiple systems used on a steam catapult); and a 10-fold increase in efficiency when compared to steam catapults.

EMALS will also generate higher sortie rates, reduce overall maintenance to the system and aircraft, and require fewer Sailors to operate.

\$6-million contract modification in March 2006 for the incorporation of two engineering change proposals for the EMALS center deck display and a revision to the launch control system motor controller, a harbinger of increased cost issues that would become synonymous with the early test and development of EMALS.

A Government Accountability Office report issued on 30 March 2009 stated that problems during EMALS development resulted in unforeseen cost growth and schedule delays. Just four months later, during the 16 July 2009 U.S. House Armed Services Seapower and Expeditionary Forces Subcommittee oversight briefing on EMALS, committee chairman Gene Taylor (D-MS) voiced his growing concerns with the future catapult system.

“I have been briefed, as I believe other members of this subcommittee have been briefed, that the issues in completing and delivering the [EMALS] components were


reached the phase 1 milestone at the General Atomics test facility in Tupelo, Miss. This testing was performed to ensure that EMALS’s motor technology would operate efficiently and reliably once it reaches the carrier. On 28 September 2009, EMALS completed the first phase of its highly accelerated life testing, which tested the catapult launch motor’s ability to operate in simulated “at-sea” environmental conditions while aboard the carrier.

The early cost overruns of the system were typical of the trial-and-error nature of developing any new technology. While the use of electromagnetic energy itself is not new, supplying the launching needs for entire carrier air wings is certainly one of the most ambitious uses of this science to date. Donnelly notes that the design, capability, and internal monitoring system of this technology is less manpower intensive than steam, which will ultimately lead to a more efficient and less costly method of launching aircraft.

“Actual EMALS operation and sustainment costs are

“I thought the launch went great,” said Radocaj, echoing the statements of Edward Feightner more than 50 years before. “I got excited once I was on the catapult but I went through the same procedures as on a steam catapult. The catapult stroke felt similar to a steam catapult and EMALS met all of the expectations I had.”

Since then, EMALS has launched a variety of aircraft from the older C-2A Greyhound to the F-35C, and its components are being delivered to *Gerald R. Ford* for installation.

More than a century has passed since Lt. Theodore G. Ellyson and his A-1 were launched into the brackish waters of Annapolis after the Navy’s first unsuccessful catapult launch. Gunpowder, flywheels, and steam all took center stage in the long drama of launching aircraft during times of both war and peace. With the commissioning of *Gerald R. Ford* in 2016, EMALS will look to improve on the job of its siblings and ensure the skies above the oceans are kept full of winged sovereignty. 





# The Day My Maintainers Saved My Life

By Lt. Trevor Prophet, USN

*Just two months into a deployment aboard USS Gary (FFG 51) in the eastern Pacific, a pilot with HSL-49 learned from his maintainers just how lucky he was after a routine flight.*  
(Photo by MC1 Ian W. Anderson)

“MO, you’re not going to believe this,” said my air det. maintenance chief in an eerie prequel to his next statement. I was the det. maintenance officer aboard USS Gary (FFG 51), operating in the eastern Pacific off the coast of South America on a six-month counter-narcotics deployment. With an auxiliary power unit and main engine change, a 175-hour phase inspection, and nearly one main transmission change already under our belts just two months after leaving our San Diego homeport on our two-plane SH-60B det., I shuddered when I imagined what words would leave his mouth next. A cautious “what?” was all I could muster. “We found a hole in the TGB [tail rotor gear box] sight gauge on the TA [turnaround inspection], and we think you might have landed with little to no transmission oil in the tail gearbox.”

As I was sitting in my stateroom, I told him I’d head back to the hangar where we could talk about it. I replayed in my mind what I had just heard: You might have landed with little to no tail transmission oil. My initial reaction was: Whiskey-Tango-Foxtrot? I sped aft to the flight deck and began the brain-racking process of questioning. How could this have happened? What did we miss? What did I do to cause this?

On the flight deck, the sight of maintainers and air crew crowded around the tail pylon suddenly snapped me out of my bout of self-questioning. I took it all in: the visible crack in the baseball-sized glass sight gauge under the starboard side of the tail cowling, disturbingly absent of any indication of oil; the dark orange hue of the oil that now soiled both sides of the tail; and the pooling of oil at the base of the pylon.

More questions arose from our team: How was it found and how much oil is left? One of our dedicated and trustworthy plane captains discovered a small crack in the TGB sight glass on a routine TA, following the shutdown of the aircraft between flights. After draining the remaining oil, it was determined that approximately 330 mL remained to splash over the helicopter’s tail rotor drive shaft, as it spun at approximately 1,200 revolutions per minute within the gearbox. That 330 mL equated to roughly one-quarter of the minimum level of servicing required (1,200 mL) before an automatic removal and replacement of the tail gearbox is mandatory. No helicopter aviator wants to imagine gears that spin at unfathomable speeds, then violently seize up because of oil starvation and cause catastrophic gear box failure in flight. Standing on the flight deck never felt so good! The question



*With little to no oil, a frozen tail rotor could have resulted in the aircraft descending in a deadly spiral.*  
(Photo by MCSN Joshua Valcarcel)

among the air crew and maintainers was how the sight glass suffered the crack in flight.

The ground turn and vibration analysis had been completed without issue, as predicted. After aircraft shutdown, the air crew performed one last aircraft walk-around, noting the tail rotor integrity for popped cowlings fasteners or any visible oil leaks, while the final vibration and maintenance paperwork was verified as “safe for flight.” On my return to the aircraft, the remaining air crew and maintenance quality assurance representatives completed their final inspections and passed the universal signal for “good to go” with exchanged thumbs up.

In the earlier functional check flight (FCF) brief, I informed the crew and maintenance team I would not be surprised if this FCF was one of the shortest they have ever seen. It was completed in 12 brief minutes. What will probably always haunt me is the suspicion that at some point during that flight, the TGB sight glass fractured and depleted its precious contents into the waters below.

Ironically, the night before the incident during a maintenance shift turnover, I discussed with my maintenance team the importance of “the little things.” I had challenged each one of them to analyze their critical procedures for safe aircraft mission execution. This maintenance challenge impacted all hands, especially the youngest of the group, the plane captains. As the last set of eyes on the aircraft before departure, they have a critically important job. Although the exact cause of the TGB glass fracture might be unknown, two things are for certain: the plane captain’s attention to detail and adherence to standard operating procedures undoubtedly prevented our degraded helicopter from relaunching that afternoon; and that was the day I will always remember my maintainers saved my life.

The backbone of Naval Aviation maintenance is procedures by the book, attention to detail, and unconditional pride

in one’s work. Despite no indications present prior to the 12-minute FCF, the damage that occurred in flight was promptly recognized once on deck and addressed regardless of the inherent pressures for deployed mission tasking. The fate of that flight came down to a matter of minutes, perhaps even seconds. With any prolonged flight it might have been disastrous, leading to a seizure of the tail rotor and forcing the aircraft into a violent downward spiral into the water. When any aircraft lifts wheels off deck, executes the assigned mission, and lands safely, remember the technical expertise and manpower required to make Naval Aviation possible. 🇺🇸

*Lt. Prophet is HSL-49 Det. 3’s maintenance officer.*



*The tail rotor gear box sight gauge is highlighted on the tail section of an SH-60B. (Photo by MC3 Brian M. Brooks)*



# YOU GET WHAT YOU PAY FOR

By Capt. Mike Warriner, USN (Ret.)

Back when electricity was getting to be a big deal, I went to flight school. When I headed off to Meridian, Miss., to fly the T-2 Buckeye, it was my first exposure to ejection seats. I remember sitting through the systems lecture for the ejection seat system and the instructor pilot said to us wide-eyed ensigns, “Should you ever have to pull the handle, take comfort in knowing that every part of this ejection seat was built by the lowest bidder.”

Cheap had never meant quality or high performance in my experience, so that worried me a bit until I figured that low bidder or not, it was better to pull the handle and bet on the seat working than ride it in. I quickly got good with the low bidder thing. If the builder says it will work, it’s going to work, right?

“You get what you pay for” is a time-tested adage. If it’s true, then the ejection seat works. It’s the low-cost bidder who won the contract, but the government paid for a component that would work and work to the specifications demanded. Right? But then I got to thinking: What if you don’t get what you pay for? Then not only are you riding the rails of the lowest bidder, you’re rolling the dice that whatever part isn’t actually up to specifications is not important enough to kill you. Not all that comforting, really.

“You pays your money, you takes your chances.” Are you good to go with that? I’m not. You pay your money, and you expect to get your money’s worth from every dollar spent. I expect to get what I pay for, and it doesn’t matter if it’s the lowest bidder or the highest bidder.

Believe it or not, however, we don’t always get what we pay for in the government. The purpose of this article is to accept this as the going-in proposition and explore one way Naval Aviation is making a difference.



*Ejection seats—like all our equipment—might have been built by the “lowest bidder,” but there are thousands of people in the Naval Aviation Enterprise who ensure that lower costs indeed can go hand in hand with the highest quality.*  
(Photo by PH3 Mark J. Rebilas)

Before going any further, let me say that I’m not interested in being sued for libel. So there are no names and deliberately not enough specificity in this article to draw a fix on any one company. There are any number of examples across multiple type/model/series that have components installed that advertise a mean time between failure rate of x, but deliver y (where y is anywhere from one percent to 99 percent less than x). I didn’t know that when I was an ensign going through my first ejection seat lecture, I didn’t know it when I was a lieutenant commander and the maintenance officer in a fleet squadron, and I didn’t know it when I was a commodore in Kingsville, Texas. I should have. I should have been more aware of the things that were causing down jets; I should have wanted them to be fixed; and I should have been involved with finding the fixes or alerted those who could fix them. Altruistically, I should have wanted them fixed so the Navy, and taxpayers, would save money. But this never crossed my mind. If I had cared at all, I would have cared because I wanted to fly more (which to be fair is ok, because flying is what we do).

As a young officer, I was striving to lead Sailors and Marines and fly my jet in a safe and tactically sound manner. Today, however, turning a blind eye to the business end of Naval Aviation stops being smart by the time you make O-4. If you are a commander/lieutenant colonel or a captain/colonel and you don’t think about the money side of things, you’re missing an opportunity and an obligation to make a difference. The last liberty boat has pulled away from fleet landing and you are not on it. Fun, sure, but there’s a price to be paid for that extra time ashore.

It’s not just about the money. Every part that has to be repaired reduces the time we spend airborne. By ourselves,

we may not be able to do as much as we’d like. But as an organization and a team, we can look for efficiencies, track things like mean time between failure rate and turnaround time, explore why actual cost per hour is higher (or lower) than budgeted, work with other organizations to improve on such things as time to replenish parts, and use metrics to tell us where we have gaps and how we are trending. There should be some kind of body that drives a focus in these areas and gets the really serious decision makers personally involved, sitting at the table to address readiness degraders and cost drivers. There really should be organization like that, shouldn’t there?

There is: it’s called the Naval Aviation Enterprise (NAE), and you know everyone involved in it. The enterprise is a partnership of 39 flag and general officers and senior executives who head the Naval Aviation commands for which you already work and who have clear Title 10/chain of command decision-making authority. It is also a partnership of type wing commodores, Marine air group commanding officers, and their supporting program managers and providers. What makes the NAE special is that while the traditional chain of command operates vertically, the enterprise is horizontal and cooperative. When these leaders meet as the NAE, their business is to advance and sustain Naval Aviation’s warfighting capabilities at an affordable cost. They do this by focusing on effectiveness, efficiency, and informed decision making that consider cost as a factor in the ability to deliver both current and long-term readiness. They review every type/model/series team’s readiness degraders, the health of the carrier fleet, the budgetary impacts to readiness across the fleet, and the state of our maintenance and supply chain. This only scratches the surface of the areas that receive direct attention and action.

The NAE came about because Naval Aviation’s readiness cycle and fiscal well being were seen as broken. The “readiness bath tub” was the real deal. I lived it. When it came to flying, it was famine followed by feast followed by famine again. At the same time, we operated in a culture of consumption where our costs per flight hour (CPFH) were growing annually at double-digit rates, and we couldn’t explain why. Since then, this enterprise partnership has figured out what’s causing most of the problems and fixed a large share of them. To be fair, we don’t have flying cars (yet), space travel isn’t open to the general public, and I still can’t drive a golf ball down the middle of the fairway—and in the same way, not everything is fixed in Naval Aviation. But we aren’t broken anymore. Naval Aviation now has a much more cost-wise approach to readiness, and we are increasingly doing things in an enterprise manner that yields cost, reliability, and safety benefits.

It is still about warfighting first. Naval Aviation with an enterprise approach helps to put real numbers to readiness

in all the areas that matter—people, equipment, supply, training, ordnance—and to tell us how many resources we need and where to put them to fix the problem. This enterprise approach has played an integral role in many other achievements over the past decade:

- Arresting the growth rate of CPFH by getting it under control to the point that, since 2004, Naval Aviation has used about \$2 billion less than it might otherwise have used if not for finding efficiencies across every platform
- Smart and interconnected aircraft and carrier transition planning that takes into consideration all people, equipment, supply, training, and ordnance resources
- Investing in reliability and sustainment initiatives that are expected to pay a nine-to-one return on investment over the life of the initiatives
- Opening communication channels and sharing information to make sure the right players are talking about the right issues to connect the dots and close seams between previously isolated teams.

The NAE is one part of Naval Aviation that distinguishes it as an organization committed to self improvement. It also serves to hold each of us—in military, government, and industry—accountable to delivering what we are asked to provide.

Back when I was a young ensign contemplating that ejection seat and what the instructor pilot said about it, I just thought that’s the way things were and the instructor was being funny. Both of us thought of it as a joke, because we never really thought too hard about whether we were getting what we paid for and whether anyone tracked or even cared about those things. In reality, there were thousands of extremely competent people in and out of uniform back then who cared about and tracked those things. But before the NAE, it was less understood, less scrutinized, less holistic, less collaborative, and less transparent, and those of us in Naval Aviation were less empowered to make a difference to change things and improve our warfighting readiness.

I wasn’t afraid to fly in a low-bidder ejection seat aircraft in the good old days because I just wanted to fly. Today, because of the NAE, I know—and we all know—a lot more. We are a better, smarter Naval Aviation today than in my active-duty days, and the NAE is one part of that. Naval Aviation is only as good as its people. It works because of your engagement and your focus on real readiness degraders and barriers to ensure we get what we pay for—regardless of high or low bidder. 🛩️

*Capt. Warriner serves as deputy director of the NAE.*



# Another Day, Another VERTREP

By Lt. j.g. Leah Jordan, USN



A vertical replenishment is a common evolution at sea, but it is anything but common for those who actually conduct it. One pilot with the HSC-8 Eightballers describes just how challenging it can be. (Photo by MC1 Elizabeth Merriam)

The pink light of pre-dawn sneaked around the circular edge of my night vision device (NVD). The still-young sun highlighted the distant horizon in a hazy gold hue typical of a morning in the Arabian Gulf. Flipping up my NVD, I blinked to adjust to the early daylight. The weariness of the 0330 wake-up had dissipated with the sun, the excitement of being airborne, and the anticipation of commencing a vertical replenishment (VERTREP) with USS *John C. Stennis* (CVN 74).

The enigmatic cluster of lights marking the presence of USNS *Bridge* (T-AOE 10) and the vast floating oasis of the carrier resolved into greater detail with the additional light, revealing the bustling activity of personnel and miniature forklifts. I glanced in the direction of the other helicopter circling nearby, waiting for the signal to begin. My helicopter aircraft commander, Lt. Andrew Leone, flew a relaxed holding pattern aft of *Bridge* as the air crew, AWS2 Spencer Frink and AWS3 Ramon Sepulveda, and I verified checklist items complete for the VERTREP.

The familiar voice of *Bridge*'s helicopter control officer, Ens. Greg Lowery, interrupted the radio silence with, "99, green deck for VERTREP."

"Green deck for VERTREP," acknowledged the *Stennis* helicopter control officer, spurring the pair of helicopters into action. Leone tightened his right-hand turn and positioned the aircraft on short final to *Bridge*'s deck. A whoosh of air entered the helicopter as the aircrewmen open the cabin door and positioned themselves for the approach.

"Six-ten, inbound right seat pick," Leone announced over the radio as he pulled back on the cyclic to decelerate. Below 45 knots, he demonstrated the helicopter's maneuverability in uncoordinated flight as its nose swung out and descended gracefully to the deck, which was an organized mess of crates and cargo nets. Between the stacks, the eyes of the aircrewmen scanned for the black tear-drop of an awaiting pendant.

"Hook-up man in sight, forward right 10," relayed Sepulveda on the internal communication system (ICS), coaching the aircraft to a low hover over the hook-up men. Unable to see beneath the aircraft, Leone held an unwavering hover as Sepulveda gazed down and out, analyzing the proximity to the assembled cargo and the progress of the hook up. "Load is hooked up," Sepulveda reported. "Hook-up men clear. Come up, straight up."

My eyes were locked on the gauges, monitoring the aircraft's response on the ascent with additional weight. The blades beat harder against the air and the helicopter paused momentarily as one of the aircrewmen called out, "weight coming on." My hands and feet hovered next to the controls as I watched the torque spike and then level.

"Load is clear, clear to go," Sepulveda announced, clearing the aircraft for forward flight.

"Gauges green, 105, 35 feet. My controls," I confirmed as my hands firmly gripped the cyclic and collective and my feet pressed against the vibrating pedals. Pushing the nose over slightly, the aircraft slowly transitioned away from *Bridge*. The aircraft fought for altitude and momentum as I turned and changed the headwind to a tailwind. I muttered encouragement under my breath, willing the radar altimeter to tick toward an altitude of 150 feet and the airspeed to 60 knots.

Crossing ahead of *Stennis*, white waves cascaded off the angled bow as the carrier steamed to take the connected replenishment position on *Bridge*'s port side. I pulled back on the cyclic, slowing the aircraft in preparation to

slide sideways. As the airspeed dropped below 35 knots, I initiated a VERTREP side flare, inputting left pedal while holding steady opposite cyclic to turn before reaching the island. "Inbound for left-seat drop," I said over the ICS, monitoring my position and altitude as I turned toward the flight deck.

"Roger, left-seat drop. Load is riding well," Frink replied, confirming the cargo remained stable under the aircraft.

Amidst the crowd of green and white flight deck jerseys on the edges of the VERTREP area, I saw a brown shirt maintainer waving the aircraft to the port ladder line. "Port forward," I said to Frink, driving the aircraft toward the spot.

"Port forward, forward 10," Frink said above the wind as he leaned out of the cabin to guide the load to the spot. The helicopter hover taxied at the height of Vulture's Row, slowly creeping forward into the 30-knot wind. Fifty feet above the flight deck, I looked at intervals for the deck edge to reference my position and steady the descent.

"Over the spot, easy down five." I felt the aircraft descend, maneuvering the aircraft more by thought than physical



"Hook-up man in sight, forward right 10," relayed Sepulveda on the internal communication system, coaching the aircraft to a low hover over the hook-up men. Unable to see beneath the aircraft, Leone held an unwavering hover as Sepulveda gazed down and out, analyzing the proximity to the assembled cargo and the progress of the hook up." (Photo by MC2 Charlotte C. Oliver)





"As the helicopter settled to 15 feet, I registered how close the stacks of cargo crowded around the aircraft, how we were able to read individual cargo slips and the wind-blown expressions of the safety observers. I refocused my attention on the gauges as Sepulveda called out 'hook-up men clear,' and I positioned the helicopter for the lift." (Photo by MC2 Charlotte C. Oliver)

inputs. Almost imperceptibly, the collective lowered, commanding a steady descent to the white ladder line. "Load is on deck." The cargo touched down on a corner, before settling completely to the flight deck. "Hook clear." The cargo hook release clicked to free the attached pendant before Frink signaled clear to go.

Leone assumed the controls, commanding a synchronized backwards climb away from the personnel working below, and then departed along the starboard side of the carrier. Afforded a better view, I gauged the precision of my first drop as the helicopter pulled away. Not too bad, I thought, viewing the two-pallet stack slightly offset from the ladder line. Luckily, I would have at least 20 more attempts.

Clear of the ship, the aircraft sped like a rocket 150 feet above the turbulent, steely blue waves. Leone pushed the helicopter faster with more forward cyclic, intent on gaining a sufficient lead from the other VERTREP helicopter over *Stennis*. Edging closer and closer to *Bridge*, he decelerated and maneuvered the aircraft over the crowded flight deck. The hook-up men—one maintainer determinedly gripping a 12-foot pendant while the other supported him—braced

at the deck's center for the incoming downwash. As the helicopter settled to 15 feet, I registered how close the stacks of cargo crowded around the aircraft, how we were able to read individual cargo slips and the wind-blown expressions of the safety observers. I refocused my attention on the gauges as Sepulveda called out "hook-up men clear," and I positioned the helicopter for the lift.

"Up and left three, two, one. Up straight up," Sepulveda directed, attempting to avoid unnecessary oscillations of the cargo. The aircraft drifted as commanded before rising and lifting the stack of three pallets into the air. "Load is clear, clear to go."

I verbalized the torque before accepting the controls and watching the small patch of black non-skid glide out from under the aircraft. In two picks, the carrier had rapidly decreased the distance, looming roughly 100 feet away and getting closer. Last pass in front, I thought as I turned 180 degrees to align with the carrier's course. Although the forklift drivers and supply personnel eyed them anxiously, the cargo from the previous two drops remained untouched. Approaching farther aft, Frink directed the aircraft to the



"With the decks side by side, the control changes came faster and the remaining stacks of pallets transferred more quickly." (Photo by MC2 Charlotte C. Oliver)

back of the port ladder line. "Forward 10." The helicopter crawled forward and gradually descended over the spot. "Stop forward. Down 5, 4, 3, 2, 1. Load is on deck, hook clear, clear to go." Before I had the chance to exhale, the aircraft began to climb away. With the rotors temporarily clear, a flurry of supply personnel descended on the cargo with an eagerness equivalent to opening presents on Christmas morning.

As the carrier neared its station alongside *Bridge*, I watched the waves increase in size as they ricocheted between the merging hulls. Only a rotor diameter separated the ships, and as Leone hovered to pick another load, I couldn't ignore the substitution of a turquoise sky with the arch of a gray hull filling the windscreen. With the carrier established off the port quarter, the flight pattern changed to negotiating a cramped thoroughfare between the two vessels. After the cargo was airborne, I turned tightly to hug the starboard edge of the carrier. I passed the island and the other Loosefoot came into view, hovering over the stern as it lowered a six-pack to the deck. As the helicopter departed, I pushed our aircraft forward and maneuvered agilely in a snug 180-degree turn.

"Starboard forward," I said to Frink, moving forward and left. With the performance of several drops, the helicopter moved more willingly, as alert as its pilots, and delighted to be in its element and performing its work. I set down the load gently as the aircrewman called it to the deck.

With the decks side by side, the control changes came faster and the remaining stacks of pallets transferred more quickly. I readjusted in my seat and, settling back, couldn't help but appreciate the scene before my eyes: two helicopters working in concert, circling with precise coordination, timing, and mutual understanding of safe separation and minimal verbal communication, one dropping loads as the other moved in to replenish. The pallets continued to reposition from one vessel to another until the forklifts had safely tucked them away in the hangar bay. Fluid, dynamic, and seemingly effortless, the flow of a VERTREP day never ceases to amaze.

Yet another reminder of why I love my job. 🐦

*Lt. j.g. Jordan is a pilot with the HSC-8 Eightballers.*



# 2012 YEAR IN REVIEW

By Dale J. Gordon, Christopher J. Martin, and Josh Phillips



USS Princeton (CG 59), USNS Guadalupe (T-AO 200), and USS Nimitz (CVN 68) participate in a replenishment at sea while USS Momsen (DDG 92) and USS Preble (DDG 88) transit in formation.  
(Photo by MC1 Michael D. Cole)

Having wrapped up more than eight years of missions in support of operations Iraqi Freedom and New Dawn in the final weeks of 2011, U.S. Naval Aviation began 2012 engaged in one major conflict, the war in Afghanistan. Nearly every carrier and amphibious strike group that deployed during the year spent part of their deployment in the Arabian Sea or the Arabian Gulf, contributing support to Operation Enduring Freedom. That presence, however, also provided needed naval power in a region beset with a host of other conflicts and potential flashpoints, from the ongoing issues of Iran's nuclear ambitions and Syria's expanding civil war, to continued instability in a host of governments from Egypt to Bahrain still reeling from the consequences of the Arab Spring. More U.S. Naval Aviation assets also began moving to the Pacific Command area of responsibility as part of the strategic shift to the Asia-Pacific region.

The long-term retooling of the fleet and force's aircraft continued apace as new systems such as the P-8A Poseidon and F-35B engaged in their first exercises or joined their first operational units. Unmanned aviation also continued to make strides with significant deployments by the MQ-8B Fire Scout and the first ship taxiing tests of the X-47B unmanned combat air system.

The Navy also said goodbye to one of its most storied and iconic ships, the nuclear aircraft carrier USS *Enterprise* (CVN 65), on 1 December when it was deactivated after completing more than 50 years of service to the nation. At that same ceremony, however, Secretary of the Navy Ray Mabus announced that CVN 80, the third *Gerald R. Ford*-class carrier, would be titled *Enterprise*—ensuring that the Navy's most famous name would continue into a new century.

The following chronology and data tables highlight the important events of Navy and Marine Corps Aviation in 2012.

## JANUARY

**15** An air crew with the VP-47 Golden Swordsmen, operating from NAS Sigonella, aided in the rescue of 68 people adrift on a powerless raft in the Mediterranean Sea, more than 80 miles southwest of Malta.

**19** USS *Halsey* (DDG 97) and a det. from HSL-49 responded to a call of distress from M/V *Albrouj*, a Yemeni dhow en route to Somalia from Yemen.

## FEBRUARY

**3** The P-8A Poseidon made its first appearance in an operational fleet exercise when it began flying sorties in support of Exercise Bold Alligator.

**16** The *Abraham Lincoln* Carrier Strike Group (CSG) launched its first combat sorties in support of Operation Enduring Freedom (OEF).

**22** Seven Marines were killed when two helicopters collided near Yuma, Ariz. The Marines, six from Camp Pendleton, Calif., and one from Yuma, were training for deployment to Afghanistan when their AH-1W Cobra and UH-1Y Huey crashed in a remote section of the Yuma Training Range Complex.

**23** Military personnel of VMFA(AW)-242, VMA-115, MACS-4 Det. B, and MALS-12 departed Korat Royal Thai Air Force Base, Thailand, after supporting Exercise Cobra Gold 2012.

**24** The Marine Corps' designated fleet replacement squadron for the Joint Strike Fighter, the VMFAT-501 Warlords, accepted its first F-35B Lightning II at a ceremony at Eglin AFB, Fla.

**26** VAW-112, the last U.S. naval squadron to leave Iraqi airspace, returned to NB Ventura County, Point Mugu.

## MARCH

**2** USS *John C. Stennis* (CVN 74) returned to its home port in Bremerton, Wash., after completing a seven-month deployment in which the carrier launched the last Navy air mission over Iraq and more than 1,000 flights over Afghanistan.

**4** Boeing delivered the first production P-8A Poseidon aircraft to the Navy in Seattle. The aircraft (BuNo 168428) was accepted by VP-30, the Navy's maritime patrol fleet replacement squadron.

**6** A civilian contractor pilot was killed when his F-21 Kfir jet crashed near the west gate of NAS Fallon.

**7** USS *Simpson* (FFG 56) and HSL-60 embarked the

MQ-8B Fire Scout for solo missions, a U.S. Navy first during a full deployment.

**11** USS *Enterprise* (CVN 65) deployed for the final time.

**13** Sailors aboard USS *Carl Vinson* (CVN 70) celebrated the carrier's 30<sup>th</sup> year of service.

## APRIL

HMLA-267 began its transition to the AH-1Z Viper in early April. The Camp Pendleton-based unit was the first Marine squadron to transition entirely to the new generation of Cobra and Huey, the AH-1Z and the UH-1Y.

**6** An F/A-18D Hornet from VFA-106 (BuNo 163452), based at NAS Oceana, crashed into the Mayfair Mews apartment complex in Virginia Beach, Va. Both pilots were treated for minor injuries, and no further injuries were reported.

**10** The Navy grounded its fleet of Fire Scout unmanned helicopters after two of the aircraft crashed overseas within a week.

**11** A Marine Corps MV-22 Osprey (BuNo 165844) crashed in Morocco killing two U.S. military personnel.

**14** USS *Somerset* (LPD 25) launched from Huntington Ingalls Industries' Avondale Shipyard in New Orleans, La. The ship—named for Somerset County in southern Pennsylvania, the crash site of United Flight 93—is the third *San Antonio*-class ship built to honor the victims of 9/11.

**17** Vice Adm. David H. Buss was nominated by President Barack Obama for the dual job of commander of Naval Air Forces and commander of the U.S. Pacific Fleet's Naval Air Forces.

**19** The T-34C Turbo Mentor made its final student training flight at NAS Whiting Field, Fla.

## MAY

**2** A T-34 made an emergency landing after striking a bird in the air. The pilots landed at Victoria Regional Airport, Victoria, Texas, after the large bird struck the left wing of the plane.

**10** Two Lockheed Martin F-35B short takeoff/vertical landing production aircraft were ferried to Eglin AFB, marking the 24<sup>th</sup> and 25<sup>th</sup> F-35 deliveries to the Department of Defense. An F-35B Lightning II made its first flight at Eglin AFB on 22 May.

**19** USS *San Diego* (LPD 22) was commissioned at the Navy Pier in San Diego.



**30** Rescue personnel from NAS Kingsville, Texas, recovered two pilots who ejected safely from a T-45 Goshawk 45 miles southwest of the base.

USS *Anchorage* (LPD 23) successfully completed its builder's trials in late May.

## JUNE

**1** USS *Ponce* (AFSB(I) 15), refitted as a floating base for helicopters and patrol craft, deployed to the Middle East after being redesignated as an afloat forward staging base (interim).

**11** A Broad Area Maritime Surveillance (BAMS) demonstrator unmanned aircraft being tested by the Navy at NAS Patuxent River crashed in a remote area of Dorchester County, Md. There were no injuries or property damage.

**14** Northrop Grumman rolled out the U.S. Navy's first MQ-4C Triton BAMS unmanned aircraft system during a ceremony in Palmdale, Calif.

**16** USS *Nimitz* (CVN 68) coordinated efforts with USS *Princeton* (CG 59), HSC-6, HSM-75, and the Mexican navy to retrieve 186 bales of marijuana destined for the United States.

## JULY

**2** While conducting coalition training in the Mediterranean Sea, USS *Dwight D. Eisenhower* (CVN 69) received a call of a downed French aircraft operating from the French aircraft carrier *Charles de Gaulle* (R 91). A helicopter from HS-5 retrieved and transported the pilot to the French carrier for medical treatment.

**9** Aircraft assigned to CVW-2 aboard USS *Abraham Lincoln* (CVN 72) completed their final combat flight operations in support of OEF.

**10** The newest training facility for the Navy's Fire Scout unmanned helicopter operators opened at NAS Jacksonville.

**18** The Navy's "Great Green Fleet" made its operational debut. *Nimitz* took on more than 900,000 gallons of 50-50 biofuel in preparation for the Navy's Great Green Fleet demonstration.

**18** The VAQ-130 Zappers landed their first operational EA-18G Growler aboard USS *Harry S. Truman* (CVN 75).

**23** Twelve MV-22 Osprey aircraft were off-loaded from a civilian cargo ship at MCAS Iwakuni, marking the first deployment of the MV-22 to Japan. The aircraft were stationed aboard MCAS Futenma in Okinawa as part of the HMM-265 Dragons.

**26** An AV-8B Harrier carrying live ordnance crashed near Imperial Valley, Calif. The pilot ejected safely.

**29** An MH-53E Sea Dragon with the HM-15 Blackhawks crashed 58 miles southwest of Muscat, Oman, while conducting heavy-lift support operations. Two of the helicopter's five crew members died, the others were recovered safely.

**29** The X-47B unmanned combat air system demonstrator completed its first flight from NAS Patuxent River.

The P-8A Poseidon made its Rim of the Pacific debut in late July while flown by two air crews from VX-1 at MCB Hawaii.

## AUGUST

**8** An F-35B dropped its first bomb, an inert 1,000-pound GBU-32 Joint Direct-Attack Munition, over an Atlantic test range.

**19** The VAW-77 Nightwolves returned from their final Central American deployment. The squadron was disestablished in March 2013.

**20** USS *Winston S. Churchill* (DDG 81) and HSL-42 Det. 8 rendered medical assistance to crewmembers on the Panamanian-flagged bulk carrier M/V *Belde*, about 110 miles north of Socotra Island, Yemen.

## SEPTEMBER

**1** A Marine pilot from the VMFA-323 Death Rattlers safely ejected from an F/A-18C Hornet before it crashed at NAS Fallon.

**14** Lt. Col. Chris Raible, commanding officer of the VMA-211 Avengers, and Sgt. Bradley Atwell, an instrument and flight control systems technician with MALS-16, were killed and six AV-8B Harriers were destroyed during an insurgent attack at Camp Bastion, Afghanistan.

**18** The VRC-30 Providers took the final flight of the last four-bladed propeller version of the C-2A Greyhound at

NAS North Island, Calif.

## OCTOBER

**1** The Navy's first unmanned helicopter reconnaissance squadron, the HUQ-1 Hydras, was established at NAS North Island.

**30** USS *Underwood* (FFG 36) and HSL-48 Det. 3 arrived at NS Mayport, Fla., after a six-month deployment at sea. *Underwood* was decommissioned in March 2013.

## NOVEMBER

**4** More than 5,500 Sailors and Marines with the *Enterprise* CSG arrived in Norfolk, Va., following the carrier's 25<sup>th</sup> and final deployment in the Mediterranean and Arabian Seas. CVW-1 returned to its home ports of NAS Oceana and NS Norfolk Chambers Field on 3 November following eight-months aboard *Enterprise*.

**9** Fleet Readiness Center (FRC) East sent off the last HH-46 "Phrog" helicopter it will service from Cherry Point to VMR-1.

**20** The 3rd MAW introduced its first F-35B squadron at MCAS Yuma. During the ceremony the VMFA(AW)-121 Green Knights, which formerly operated F/A-18D Hornets,

were re-designated as VMFA-121.

**26** A CH-46E Sea Knight made its last flight over MCAS Futenma. The last of the Sea Knights with the VMM-265 Dragons flew to Camp Kinser, Okinawa, Japan, on 26 November to await final disposition.

**29** P-3C Orions from the VP-8 Fighting Tigers and VP-10 Red Lancers, in concert with the Canadian frigate HMCS *Ottawa* (FFH 341), helped recover more than a ton of cocaine valued at more than \$75 million during an interdiction in the 4<sup>th</sup> Fleet area of responsibility (AOR).

## DECEMBER

**1** The Navy's fourth Fire Scout det. returned to Mayport after achieving several milestones during its five-month deployment aboard USS *Klakring* (FFG 42). The det. logged more than 500 flight hours in the U.S. Africa Command AOR.

**10** FRC Southwest held a ground breaking ceremony for its new helicopter maintenance, overhaul, and repair facility at NAS North Island. The new facility replaced three existing buildings where Navy and Marine Corps H-60 Seahawks and CH-53 Super Stallions are serviced.

**14** The last P-3C Orions from the VP-5 Mad Foxes returned to NAS Jacksonville. This deployment was their last as a P-3C squadron as they transitioned to the P-8A Poseidon in February 2013.

USS Iwo Jima (LHD 7) under way in the Atlantic Ocean.  
(Photo by MC2 Jonathan Sunderman)





# Amphibious Assault Carrier and Embarked Squadron Deployments

## Bataan (LHD 5) Amphibious Ready Group (ARG) Mediterranean and Arabian Gulf

23 Mar 2011 – 7 Feb  
Bataan (LHD 5)  
Mesa Verde (LPD 19)  
Whidbey Island (LSD 41)

Squadron	Aircraft
VMM-263 Rein. (EG)	MV-22B
HSC-28 Det. 2 (BR)	MH-60S
VMA-231 Det. (CG)	AV-8B
VMM-263 Det. (EG)	MV-22B
HMH-366 Det. (HH)	CH-53E
HMLA-167 Det. (TV)	AH-1W and UH-1Y
HSC-28 Det. (BR)	MH-60S

## Makin Island (LHD 8) ARG Western Pacific and Arabian Gulf

14 Nov 2011 – 22 Jun  
Makin Island (LHD 8)  
New Orleans (LPD 18)  
Pearl Harbor (LSD 52)

Squadron	Aircraft
VMA-214 Det. (WE)	AV-8B
HMM-268 Rein. (YQ)	CH-46E
HMH-461 Det. (CJ)	CH-53E
HMLA-367 Det. (VT)	AH-1W and UH-1Y
HSC-23 Det. (WC)	MH-60S

## Iwo Jima (LHD 7) ARG Eastern Atlantic, Mediterranean, and Arabian Gulf

27 Mar – 20 Dec  
Iwo Jima (LHD 7)  
New York (LPD 21)  
Carter Hall (LSD 50)

Squadron	Aircraft
VMM-261 Rein. (EM)	MV-22B
VMA-542 Det. (WH)	AV-8B
HSC-22 Det. (AM)	MH-60S

## Peleliu (LHA 5) ARG Western Pacific and Arabian Gulf

17 Sep – 14 May 2013  
Peleliu (LHA 5)  
Green Bay (LPD 20)  
Rushmore (LSD 47)

Squadron	Aircraft
HMM-364 Rein. (PF)	CH-46E
HMLA-369 Det. (SM)	AH-1W and UH-1Y
VMA-311 Det. (WL)	AV-8B
HSC-21 Det. (VR)	MH-60S

Sailors man the rails aboard USS Makin Island (LHD 8)  
as the ship returns to San Diego following  
a seven-month maiden deployment.  
(Photo by MC2 Dominique Pineiro)





## Major Land-Based Deployments

### Al Udeid AB, Qatar

VP-40 Det. .... Dec-  
VR-51 Det. 26 ..... Sep 11-8 Jan

### NAS Atsugi, Japan

VR-54 Det. .... 1 Jan-17 Jan  
..... 11 Oct-10 Jan 13  
VR-57 Det. .... 20 May-2 Jun  
..... 29 May-17 Jun  
..... 13 Jun-2 Jul  
..... 28 Jun-17 Jul  
..... 13 Jul-2 Aug  
..... 20 Oct-1 Nov  
..... 9 Nov-28 Nov  
..... 28 Nov-12 Dec  
..... 8 Dec-23 Dec  
VR-58 Det. .... 27 Feb-4 Jun  
VR-62 Det. .... 27 Jul-17 Oct

### Bagram AB, Afghanistan

VAQ-135 ..... 4 May-15 Sep

### Kabul, Afghanistan

VR-1 Det. 1 ..... Oct-1 Jan 13

### Kadena AFB, Okinawa, Japan

VP-45 ..... 24 Nov-

### Clark AB, Luzon, Philippines

VP-45 ..... 2 Dec-8 Dec

### Masirah, Oman

VP-26 Det. .... 7 May-17 May

### NAS Sigonella, Italy

VP-40 Det. .... Dec-  
VR-51 Det. .... 29 Oct 11-12 Nov  
VR-54 Det. .... 28 Mar-21 Jun  
VR-56 Det. C ..... 24 Nov-11 Dec  
VR-56 Det. D ..... 7 Dec-22 Dec  
VR-58 Det. .... 14 Jun-17 Jun

### NSA Bahrain

VR-53 Det. .... 10 Mar-21 Jul  
VR-54 Det. .... 15 Jul-15 Nov  
VR-56 Det. A ..... 28 Jun-17 Jul  
VR-56 Det. B ..... 13 Jul-2 Aug  
VR-56 Det. C ..... 29 Jul-17 Aug  
VR-56 Det. D ..... 13 Aug-2 Sep  
VR-56 Det. E ..... 29 Aug-17 Sep  
VR-56 Det. F ..... 13 Sep-2 Oct  
VR-56 Det. A ..... 1 Oct-21 Oct  
VR-56 Det. B ..... 17 Oct-6 Nov  
VR-57 Det. .... 29 Jan-17 Feb  
..... 12 Feb-2 Mar  
..... 26 Feb-18 Mar  
..... 14 Mar-3 Apr  
..... 28 Mar-17 Apr  
..... 12 Apr-3 May  
..... 28 Apr-17 May  
VR-58 Det. .... 2 Nov-9 Dec  
VR-62 Det. .... 28 Nov 11-17 Mar  
..... 14 Nov-28 Jan 13

## Major Aviation Command Changes

### Activated/Established

HSM-35 Magicians ..... 1 Jul  
HUQ-1 Hydras ..... 1 Oct

### Reactivated

VFA-101 Grim Reapers ..... 1 May

### Deactivated/Disestablished

VFA-125 Rough Raiders ..... 31 Jan  
VMM-561 Pale Horses ..... 6 Jul  
VPU-1 Old Buzzards ..... 31 Aug  
VQ-2 Batmen ..... 31 Aug  
VR-46 Eagles ..... 30 Sep  
VR-48 Capital Skyliners ..... 30 Sep  
VR-52 Taskmasters ..... 30 Sep  
HS-10 Warhawks ..... 30 Sep  
HMH-362 Ugly Angels ..... 30 Nov

### Redesignated

HS-4 to HSC-4 ..... 1 Jan  
HSL-43 to HSM-73 ..... 1 Feb  
HSL-46 to HSM-46 ..... 1 Mar  
HMH-363 to VMM-363 ..... 10 May  
Airborne Command and Control Logistics Wing Det. Weapons and Tactics Unit-Point Mugu to Airborne .....  
Command and Control Logistics Weapons School Pacific ..... 1 Jun  
Airborne Command and Control Logistics Wing Det. Weapons and Tactics Unit-Norfolk to Airborne .....  
Command and Control Logistics Weapons School Atlantic ..... 1 Jun  
HS-15 to HSC-15 ..... 1 July  
Patrol and Reconnaissance Group Atlantic to Patrol and Reconnaissance Group ..... 9 July  
HMM-265 to VMM-265 ..... 7 Sep  
VMFA(AW)-121 to VMFA-121 ..... 20 Nov

*F/A-18 Hornets sit on the flight deck of  
USS Dwight D. Eisenhower (CVN 69) at sunset.  
(Photo by MC3 Ryan D. McLearn)*





Major Independent Helicopter Deployments

Squadron	Aircraft	Ship or Station	Area of Deployment	Date
HSC-6 Det.	MH-60S	Matthew Perry (T-AKE 9)		6 Jul-
HSC-7 Det.	MH-60S	Harry S. Truman (CVN 75)		July
HS-14	SH60F/ HH-60H	George Washington (CVN 73)	7 <sup>th</sup> Fleet	25 May-27Jul 20 Aug-21 Nov
HS-15	MH-60S	Carl Vinson (CVN 70)	3 <sup>rd</sup> , 5 <sup>th</sup> , and 7 <sup>th</sup> Fleet	30 Nov 11-22 May
HSL-37 Det. 5	SH-60B	Port Royal (CG 73)	Western Pacific/CENTCOM	1 Jan-13Feb
HSL-48 Det. 1	SH-60B	Forrest Sherman (DDG 98)	Mediterranean	3 Jul-31 Dec
HSL-48 Det. 2	SH-60B	Carr (FFG 52)	Caribbean	3 Jun-28 Nov
HSL-48 Det. 3	SH-60B	Underwood (FFG 36)	4 <sup>th</sup> Fleet	1 May-29 Oct
HSL-48 Det. 7	SH-60B	Farragut (DDG 99)	Mediterranean, Africa	20 Jun-31 Dec
HSL-48 Det. 8	SH-60B	Hue City (CG 66)	5 <sup>th</sup> Fleet	20 Jun-19 Dec
HSL-48 Det. 9	SH-60B	Taylor (FFG 50)	Africa	9 Feb-10 Sep
HSL-60 Det. 3	SH-60B	Elrod (FFG 55)	Caribbean	20 Jan-18 Jul
HSL-60 Det. 4	SH-60B	Simpson (FFG 56)	Africa	17 Jan-17 Jul
HSM-70	SH-60B	Halyburton (FFG 40)	5 <sup>th</sup> and 6 <sup>th</sup> Fleet	10 Aug-31 Dec
HSM-74 Det. 1	MH-60R	Gravely (DDG 107)		April 12-
HSM-74 Det. 3	MH-60R	Mason (DDG 87)		Nov 12-
HSM-74 Det. 4	MH-60R	Bulkeley (DDG 84)		Nov 12-

Aircraft Accepted

BuNo	Quantity	Type	Name
166128-166167	40	T-6B	Texan II
167032	1	MH-60R	Seahawk
167034	1	MH-60R	Seahawk
167036-167066	31	MH-60R	Seahawk
167784-167785	2	MQ-8B	Fire Scout
167900-167901	2	MH-60S	Seahawk
167952	1	P-8A	Poseidon
167956	1	P-8A	Poseidon
168058-168062	5	F-35B	Lightning
168214-168244	31	MV-22B	Osprey
168275-168276	2	E-2D	Advanced Hawkeye
168308-168314	7	F-35B	Lightning
168317-168320	4	UH-1Y	Venom
168353-168370	18	F/A-18E	Super Hornet
168371-168392	22	EA-18G	Growler
168394-168397	4	MH-60S	Seahawk
168407-168417	11	UH-1Y	Venom
168418-168422	5	AH-1Z	Viper
168426-168427	2	UH-1Y	Venom
168428-168432	5	P-8A	Poseidon
168441-168443	3	MQ-8B	Fire Scout
168449-168451	3	MQ-8B	Fire Scout
168463-168466	4	F/A-18E	Super Hornet
168485	1	F/A-18F	Super Hornet
168516-168517	2	AH-1Z	Viper
168530-168541	12	MH-60S	Seahawk
168717-168720	4	F-35B	Lightning
168765-168767	3	EA-18G	Growler



Marines board an MH-53 Super Stallion helicopter during personnel transfers aboard USS New York (LPD 21).  
(Photo by MCSN Cyrus Roson)



Aircraft Stricken

BuNo	Action Date	Type	Name	BuNo	Action Date	Type	Name
149808.....	1 May .....	KC-130F .....	Hercules	160452.....	3 Mar .....	UH-1N .....	Iroquois
152578.....	24 Oct .....	CH-46E .....	Sea Knight	160453.....	8 Mar .....	UH-1N .....	Iroquois
153316.....	1 Mar .....	CH-46E .....	Sea Knight	160454.....	6 Mar .....	UH-1N .....	Iroquois
153365.....	16 Nov .....	CH-46E .....	Sea Knight	160462.....	26 Mar .....	T-34C .....	Turbo Mentor
153366.....	16 Nov .....	CH-46E .....	Sea Knight	160465.....	19 Jan .....	T-34C .....	Turbo Mentor
153999.....	16 Nov .....	CH-46E .....	Sea Knight	160466.....	2 Mar .....	T-34C .....	Turbo Mentor
154845.....	6 Jan .....	CH-46E .....	Sea Knight	160471.....	11 Sep .....	T-34C .....	Turbo Mentor
154847.....	1 May .....	CH-46E .....	Sea Knight	160485.....	23 Feb .....	T-34C .....	Turbo Mentor
154860.....	15 Mar .....	CH-46E .....	Sea Knight	160505.....	3 Aug .....	T-34C .....	Turbo Mentor
155302.....	25 Jul .....	CH-46E .....	Sea Knight	160513.....	3 Aug .....	T-34C .....	Turbo Mentor
156419.....	30 Mar .....	CH-46E .....	Sea Knight	160515.....	13 Sep .....	T-34C .....	Turbo Mentor
156431.....	29 Mar .....	CH-46E .....	Sea Knight	160519.....	3 Aug .....	T-34C .....	Turbo Mentor
156440.....	12 Oct .....	CH-46E .....	Sea Knight	160522.....	19 Jan .....	T-34C .....	Turbo Mentor
156446.....	16 Nov .....	CH-46E .....	Sea Knight	160529.....	12 May .....	T-34C .....	Turbo Mentor
156961.....	10 Oct .....	CH-53D .....	Sea Stallion	160530.....	4 May .....	T-34C .....	Turbo Mentor
156967.....	19 Mar .....	CH-53D .....	Sea Stallion	160609.....	27 Mar .....	EA-6B .....	Prowler
157135.....	10 Aug .....	CH-53D .....	Sea Stallion	160630.....	11 Jul .....	T-34C .....	Turbo Mentor
157142.....	26 Mar .....	CH-53D .....	Sea Stallion	160639.....	6 Apr .....	T-34C .....	Turbo Mentor
157144.....	2 Feb .....	CH-53D .....	Sea Stallion	160643.....	3 Aug .....	T-34C .....	Turbo Mentor
157150.....	10 Oct .....	CH-53D .....	Sea Stallion	160645.....	15 Mar .....	T-34C .....	Turbo Mentor
157164.....	23 Mar .....	CH-53D .....	Sea Stallion	160649.....	18 Jul .....	T-34C .....	Turbo Mentor
157173.....	23 Jan .....	CH-53D .....	Sea Stallion	160791.....	6 Dec .....	EA-6B .....	Prowler
157174.....	20 Jan .....	CH-53D .....	Sea Stallion	160931.....	19 Apr .....	T-34C .....	Turbo Mentor
157322.....	7 Jan .....	P-3C .....	Orion	160935.....	19 Jul .....	T-34C .....	Turbo Mentor
157690.....	1 Mar .....	CH-46E .....	Sea Knight	160939.....	13 Dec .....	T-34C .....	Turbo Mentor
157699.....	16 Nov .....	CH-46E .....	Sea Knight	160950.....	25 Jul .....	T-34C .....	Turbo Mentor
157714.....	16 Nov .....	CH-46E .....	Sea Knight	160953.....	26 Mar .....	T-34C .....	Turbo Mentor
157728.....	29 Aug .....	CH-53D .....	Sea Stallion	160956.....	8 Mar .....	T-34C .....	Turbo Mentor
157733.....	17 Mar .....	CH-53D .....	Sea Stallion	160958.....	11 Jun .....	T-34C .....	Turbo Mentor
158289.....	25 Feb .....	UH-1N .....	Iroquois	160963.....	19 Jan .....	T-34C .....	Turbo Mentor
158650.....	11 Apr .....	EA-6B .....	Prowler	161006.....	15 May .....	P-3C .....	Orion
158772.....	23 Jul .....	UH-1N .....	Iroquois	161032.....	1 Aug .....	T-34C .....	Turbo Mentor
158773.....	23 Jul .....	UH-1N .....	Iroquois	161035.....	7 Jun .....	T-34C .....	Turbo Mentor
159114.....	10 Jul .....	C-9B .....	Skytrain	161039.....	11 May .....	T-34C .....	Turbo Mentor
159115.....	1 Aug .....	C-9B .....	Skytrain	161042.....	23 Jul .....	T-34C .....	Turbo Mentor
159118.....	14 Sep .....	C-9B .....	Skytrain	161043.....	13 Aug .....	T-34C .....	Turbo Mentor
159513.....	14 Sep .....	P-3C .....	Orion	161046.....	24 Jan .....	T-34C .....	Turbo Mentor
159514.....	12 Sep .....	P-3C .....	Orion	161051.....	25 Apr .....	T-34C .....	Turbo Mentor
159583.....	14 Mar .....	EA-6B .....	Prowler	161266.....	7 Jun .....	C-9B .....	Skytrain
159681.....	10 Mar .....	UH-1N .....	Iroquois	161332.....	11 Jul .....	P-3C .....	Orion
159686.....	7 Jan .....	UH-1N .....	Iroquois	161334.....	7 Jan .....	P-3C .....	Orion
159777.....	22 Feb .....	UH-1N .....	Iroquois	161500.....	11 Jan .....	UC-12B .....	Huron
159880.....	7 Mar .....	F-5E .....	Tiger II	161501.....	5 Jan .....	UC-12B .....	Huron
159908.....	5 Dec .....	EA-6B .....	Prowler	161723.....	24 Oct .....	F/A-18B .....	Hornet
160048.....	10 Aug .....	C-9B .....	Skytrain	161791.....	8 Mar .....	T-34C .....	Turbo Mentor
160049.....	22 Feb .....	C-9B .....	Skytrain	161792.....	5 Mar .....	T-34C .....	Turbo Mentor
160107.....	22 Feb .....	AH-1W .....	Super Cobra	161801.....	3 Feb .....	T-34C .....	Turbo Mentor
160168.....	17 Jan .....	UH-1N .....	Iroquois	161802.....	6 Feb .....	T-34C .....	Turbo Mentor
160172.....	17 Jan .....	UH-1N .....	Iroquois	161807.....	30 Apr .....	T-34C .....	Turbo Mentor
160268.....	8 Aug .....	T-34C .....	Turbo Mentor	161811.....	9 Feb .....	T-34C .....	Turbo Mentor
160269.....	7 May .....	T-34C .....	Turbo Mentor	161817.....	24 Feb .....	T-34C .....	Turbo Mentor

Aircraft Stricken

BuNo	Action Date	Type	Name	BuNo	Action Date	Type	Name
161820.....	9 Feb .....	T-34C .....	Turbo Mentor	163670.....	3 May .....	AV-8B .....	Harrier
161824.....	13 Feb .....	T-34C .....	Turbo Mentor	163676.....	3 May .....	AV-8B .....	Harrier
161828.....	8 Mar .....	T-34C .....	Turbo Mentor	163905.....	1 May .....	SH-60B .....	Seahawk
161829.....	13 Sep .....	T-34C .....	Turbo Mentor	163954.....	20 Jan .....	AH-1W .....	Super Cobra
161838.....	21 May .....	T-34C .....	Turbo Mentor	164071.....	9 Apr .....	SH-60F .....	Seahawk
161880.....	19 Mar .....	EA-6B .....	Prowler	164073.....	5 Mar .....	SH-60F .....	Seahawk
161883.....	3 Oct .....	EA-6B .....	Prowler	164083.....	5 Apr .....	SH-60F .....	Seahawk
162114.....	10 Feb .....	SH-60B .....	Seahawk	164084.....	18 Apr .....	SH-60F .....	Seahawk
162117.....	21 Sep .....	SH-60B .....	Seahawk	164095.....	31 Jul .....	SH-60F .....	Seahawk
162250.....	23 Feb .....	T-34C .....	Turbo Mentor	164110.....	3 Feb .....	TE-2C .....	Hawkeye
162252.....	14 Sep .....	T-34C .....	Turbo Mentor	164147.....	30 Jul .....	AV-8B .....	Harrier
162253.....	12 Apr .....	T-34C .....	Turbo Mentor	164159.....	7 Jun .....	T-34C .....	Turbo Mentor
162256.....	20 Jan .....	T-34C .....	Turbo Mentor	164165.....	24 Jul .....	T-34C .....	Turbo Mentor
162261.....	12 Sep .....	T-34C .....	Turbo Mentor	164173.....	30 Apr .....	T-34C .....	Turbo Mentor
162267.....	30 Mar .....	T-34C .....	Turbo Mentor	164444.....	5 Jan .....	SH-60F .....	Seahawk
162273.....	27 Jul .....	T-34C .....	Turbo Mentor	164457.....	13 Apr .....	SH-60F .....	Seahawk
162274.....	16 Mar .....	T-34C .....	Turbo Mentor	164458.....	12 Mar .....	SH-60F .....	Seahawk
162283.....	9 Feb .....	T-34C .....	Turbo Mentor	164461.....	2 May .....	SH-60B .....	Seahawk
162294.....	10 Sep .....	T-34C .....	Turbo Mentor	164462.....	16 Nov .....	SH-60B .....	Seahawk
162296.....	9 Feb .....	T-34C .....	Turbo Mentor	164570.....	14 Sep .....	AV-8B .....	Harrier
162299.....	8 Mar .....	T-34C .....	Turbo Mentor	164620.....	1 Feb .....	SH-60F .....	Seahawk
162303.....	20 Aug .....	T-34C .....	Turbo Mentor	164724.....	1 Sep .....	F/A-18C .....	Hornet
162328.....	29 Aug .....	SH-60B .....	Seahawk	164793.....	12 Jul .....	MH-53E .....	Sea Dragon
162331.....	13 Jan .....	SH-60B .....	Seahawk	164803.....	22 Sep .....	SH-60F .....	Seahawk
162333.....	7 May .....	SH-60B .....	Seahawk	165052.....	13 Sep .....	AH-1W .....	Super Cobra
162334.....	14 May .....	SH-60B .....	Seahawk	165286.....	13 Sep .....	AH-1W .....	Super Cobra
162335.....	19 Sep .....	SH-60B .....	Seahawk	165292.....	13 Sep .....	AH-1W .....	Super Cobra
162339.....	20 Jan .....	SH-60B .....	Seahawk	165360.....	8 Feb .....	AH-1W .....	Super Cobra
162340.....	9 Feb .....	SH-60B .....	Seahawk	165422.....	14 Sep .....	AV-8B .....	Harrier
162349.....	17 Mar .....	SH-60B .....	Seahawk	165444.....	2 Feb .....	MV-22B .....	Osprey
162514.....	25 Jul .....	MH-53E .....	Sea Dragon	165568.....	14 Sep .....	AV-8B .....	Harrier
162628.....	16 Mar .....	T-34C .....	Turbo Mentor	165570.....	14 Sep .....	AV-8B .....	Harrier
162630.....	24 Jan .....	T-34C .....	Turbo Mentor	165578.....	14 Sep .....	AV-8B .....	Harrier
162632.....	23 Jan .....	T-34C .....	Turbo Mentor	165591.....	14 Sep .....	AV-8B .....	Harrier
162633.....	21 May .....	T-34C .....	Turbo Mentor	165844.....	11 Apr .....	MV-22B .....	Osprey
162638.....	6 Mar .....	T-34C .....	Turbo Mentor	166637.....	24 Feb .....	F/A-18F .....	Super Hornet
162639.....	12 Apr .....	T-34C .....	Turbo Mentor	167081.....	30 May .....	T-45C .....	Texan II
162645.....	11 May .....	T-34C .....	Turbo Mentor	167788.....	6 Apr .....	MQ-8B .....	Fire Scout
162647.....	2 Jun .....	T-34C .....	Turbo Mentor	167987.....	26 Jul .....	MQ-8B .....	Fire Scout
162980.....	23 Jul .....	SH-60B .....	Seahawk	167988.....	13 Dec .....	MQ-8B .....	Fire Scout
162982.....	5 Apr .....	SH-60B .....	Seahawk	168039.....	22 Feb .....	UH-1Y .....	Venom
162987.....	14 May .....	SH-60B .....	Seahawk	168739.....	11 Jun .....	RQ-4A .....	Global Hawk
162990.....	18 Sep .....	SH-60B .....	Seahawk	312609.....	14 Sep .....	RQ-7B .....	Shadow
163233.....	21 Dec .....	SH-60B .....	Seahawk	730855.....	7 Mar .....	F-5E .....	Tiger II
163283.....	17 Jul .....	X-49A .....	Speedhawk	731635.....	8 Mar .....	F-5E .....	Tiger II
163401.....	27 Jul .....	EA-6B .....	Prowler	741530.....	13 Mar .....	F-5E .....	Tiger II
163436.....	6 Apr .....	F/A-18D .....	Hornet	741536.....	13 Mar .....	F-5E .....	Tiger II
163446.....	5 Oct .....	F/A-18C .....	Hornet	741547.....	8 Mar .....	F-5E .....	Tiger II
163515.....	3 May .....	AV-8B .....	Harrier	741554.....	13 Mar .....	F-5E .....	Tiger II
163520.....	18 Dec .....	EA-6B .....	Prowler	760172.....	19 Sep .....	C-12C .....	Huron
163596.....	31 May .....	SH-60B .....	Seahawk	870157.....	14 Mar .....	NC-130H .....	Hercules



Carrier Strike Group Major Deployments

Abraham Lincoln (CVN 72)  
Carrier Strike Group (CSG)

Western Pacific and Arabian Gulf

7 Dec 2011-7 Aug

Abraham Lincoln (CVN 72)  
Cape St. George (CG 71)  
Momsen (DDG 92)  
Shoup (DDG 86)  
Halsey (DDG 97)  
Sterett (DDG 104)  
CVW-2 (Tail Code: NE)

Squadron	Aircraft
VFA-2	F/A-18F
VFA-137	F/A-18E
VFA-86	F/A-18E
VFA-34	F/A-18C
VAQ-131	EA-6B
VAW-113	E-2C
HSC-12	MH-60S
HSM-77	MH-60R
VRC-30 Det. 2 (RW)	C-2A

Dwight D. Eisenhower (CVN 69) CSG

Mediterranean and Arabian Gulf

20 Jun-19 Dec

Dwight D. Eisenhower (CVN 69)  
Hue City (CG 66)  
Winston S. Churchill (DDG 81)  
Jason Dunham (DDG 109)  
Farragut (DDG 99)  
CVW-7 (Tail Code: AG)

Squadron	Aircraft
VFA-143	F/A-18E
VFA-103	F/A-18F
VFA-83	F/A-18C
VFA-131	F/A-18C
VAQ-140	EA-6B
VAW-121	E-2C
HS-5	H/HH-60F/H
VRC-40 Det. 3 (JK)	C-2A

Carl Vinson (CVN 70) CSG

North Arabian Sea

30 Nov 2011-23 May

Carl Vinson (CVN 70)  
Bunker Hill (CG 52)  
Halsey (DDG 97)  
Bridge (T-AOE 10)  
CVW-17 (Tail Code: NA)

Squadron	Aircraft
VFA-81	F/A-18E
VFA-22	F/A-18F
VFA-113	F/A-18C
VFA-25	F/A-18C
VAQ-134	EA-6B
VAW-125	E-2C
HS-15	HH/SH-60F/H
VRC-40 Det. 5 (JK)	C-2A

George Washington (CVN 73) CSG

Western Pacific

26 May-20 Nov

George Washington (CVN 73)  
Cowpens (CG 63)  
John S. McCain (DDG 56)  
Fitzgerald (DDG 62)  
McCampbell (DDG 85)  
Mustin (DDG 89)  
CVW-5 (Tail Code: NF)

Squadron	Aircraft
VFA-27	F/A-18E
VFA-102	F/A-18F
VFA-115	F/A-18E
VFA-195	F/A-18E
VAQ-141	EA-18G
VAW-115	E-2C
HS-14	HH/SH-60F/H
VRC-30 Det. 5 (RW)	C-2A

Enterprise (CVN 65) CSG

Arabian Gulf

11 Mar-3 Nov

Enterprise (CVN 65)  
Porter (DDG 78)  
Nitze (DDG 94)  
James E. Williams (DDG 95)  
CVW-1 (Tail Code: AB)

Squadron	Aircraft
VFA-211	F/A-18F
VFA-11	F/A-18F
VFA-136	F/A-18E
VMFA-251	F/A-18C
VAW-123	E-2C
VAQ-137	EA-6B
HS-11	HH/SH-60F/H
VRC-40 Det. 1 (JK)	C-2A

John C. Stennis (CVN 74) CSG

Western Pacific and Arabian Gulf

27 Aug-3 May 2013

John C. Stennis (CVN 74)  
Mobile Bay (CG 53)  
Pinckney (DDG 91)  
Kidd (DDG 100)  
Dewey (DDG 105)  
Wayne E. Meyer (DDG 108)  
Yukon (T-AO 202)  
CVW-9 (Tail Code: NG)

Squadron	Aircraft
VFA-41	F/A-18F
VFA-14	F/A-18E
VFA-97	F/A-18C
VFA-192	F/A-18C
VAQ-133	EA-6B
VAW-112	E-2C
HSC-8	MH-60S
HSM-71	MH-60R
VRC-30 Det. 4 (RW)	C-2A



USS Carl Vinson (CVN 70) leads USS Bunker Hill (CG 52) and USS Halsey (DDG 97) during a passing exercise with Indian navy ships during Exercise Malabar 2012.  
(Photo by MCSN George M. Bell)

The 2012 Year in Review was compiled by Naval History and Heritage Command (NHHC) reference archivist Dale J. Gordon, NHHC archives personnel Christopher J. Martin, and Naval Aviation News associate editor Josh Phillips.



# PROFESSIONAL READING

By Cmdr. Peter Mersky, USNR (Ret.)



(Photo by MC3 Dylan McCord)

## *The Naval Institute Guide to the Ships and Aircraft of the U.S. Fleet, Nineteenth Edition*

Norman Polmar. Annapolis, Md.: Naval Institute Press, 2013. 688 pp. \$135.00.

The scope and coverage of this now-standard reference continue to be staggering. It includes everything from personnel to radar, weapon systems, and highly specialized and experimental craft, as well as lengthy and authoritative sections on serving ships and aircraft. It is without a doubt the best all-around treatment of this subject available.

Like previous editions, this is a large book. It has everything you might want to know about the equipment of today's naval services, including the Marine Corps and Coast Guard. There are especially detailed sections on unmanned aerial vehicles and a two-page glossary for those who do not (or cannot) keep up to date with the myriad acronyms so favored by the Navy and Marine Corps.

It is amazing how many different categories of interest the author continues to present in each edition. The book's leading chapter also is a thought-provoking essay on where the Navy and its departments are at this point in time in the early 21<sup>st</sup> century. Polmar describes a Navy that, like so many other government organizations, is battling the loss of funding and resulting manpower reductions at a time when it can be ill afforded. So many new programs, as well as the country's ability to provide a strong maritime force, are in jeopardy because of the thinning of resources.

Polmar covers a wide range of issues. We want our carriers to have modern aircraft and the people who man and maintain them to have the best training and supply system. The new area of unmanned aircraft has taken a large amount of funding, all in the name of progress and safety for flight

crews in manned aircraft. We want a new maritime patrol aircraft to replace the veteran P-3, as well as aircraft that can serve in every service. The F-35 series intended for the Navy, Marine Corps, and Air Force is the current poster child for strung-out programs that are not ready for their intended date of introduction.

Various line drawings, great photos, and a spread of tables highlight the graphic aspect of the book and add to its general appeal. Polmar is a highly experienced data gatherer, and over the many years he has been working he has learned how to present his information in clear and concise illustrations that help clarify and enhance his writing.

The author claims this is his last go around with this understandably laborious project. Speaking from personal experience, it is hard to let go after making a particular book your own. But if this *is* to be his swan song, he goes out on a very high note.

## *Naval Aviation in the Korean War*

Warren Thompson. South Yorkshire, U.K.: Pen & Sword Aviation, 2012. 175 pp. \$50.00.

The war in Korea caught most of the world by surprise. The invasion by the North Koreans on a quiet 25 June 1950 plunged the divided peninsula into a very bloody conflict that ultimately involved countries from all over the world, almost like a mini world war. To have such a conflict so soon after World War II was almost unthinkable for the Western allies, who scrambled to put together a large force to counter the thrust by an Asian alliance spearheaded by North Korea and later joined by Communist China and the Soviet Union.

There were only two aircraft carriers on station, one American and one British, and the state of U.S. and British ground forces in the region was even less advantageous. The U.S. Air Force and other countries' aviation assets were also very weak. The North Koreans plowed southward, capturing the South Korean capital of Seoul in a few days. Things looked bleak as the meager U.S. Army and Marine Corps ground units struggled to contain the Communist threat.

Eventually, the Allies were able to mount a strategic offensive using air, sea, and ground units that threw the enemy out, sending him back to the 38<sup>th</sup> parallel. Still, the stalemate that soon took over the war saw a loss of many lives and material. It was not until June 1953 that a shaky ceasefire was arranged, not a final truce that brought an end to the war. That is the way things stand today, 60 years later, as Pyongyang issues almost daily threats, this time with a potentially nuclear tinge.

Warren Thompson's latest book is a close look at the U.S. Navy's experience in Korea. There are other books about the same subject, in particular Richard P. Hallion's *The Naval Air War in Korea* (1986), which devotes more space to the Marines than Thompson's. Thompson promises to consider another book concentrating on that aspect of aviation in Korea. Without a doubt, the greatest appeal of this new book is the terrific range of black-and-white and color photos gleaned from the author's collection, which has to be one of the best in the world. Pen & Sword takes full advantage of this impressive group of images and offers a wonderful assembly of pictures seldom found in any of today's publications.

I would have liked to have seen an index, which a book of this sort definitely needs. No history book is complete without a list of names, events, subjects, and page references, all for easy use by the reader and researcher. The end section is a collection of descriptions of the most important Navy aircraft used during the conflict, as well as a collection of appendices listing carrier, air group, and patrol squadron deployments (although very little if any mention is made of these latter types and their role in the war).

## *US Marine Corps F-4 Phantom II Units of the Vietnam War*

Peter E. Davies. Oxford, U.K.: Osprey Publishing, 2012. 96 pp. \$22.95.

This is a story that was a long time coming, and what better publisher or author to tell it. A few books on Marine Corps Phantoms have appeared, but not with the depth and detail of this one. It also has one of the most stunning covers in the entire Osprey lineup. Scottish artist Gareth Hector has created a depiction of the F-4 in action where the aircraft nearly jumps right off the cover. As always,

Jim Laurier has produced his usual folio of great color profiles showing various Marine Corps squadron colors as well as the armament and ordnance carried by leatherneck Phantoms in Southeast Asia.

The author was helped by the participation of several now-senior Marine aviators who flew multiple tours during the war and who well recall their experiences and the people with whom they flew.

The book begins with a description of early missions for Marine F-4s in Vietnam in 1965, one of the most detailed such discussions I have seen. Historians often devote most of their coverage to the stories and experiences of crews, but the author takes time here to set the scene and write about delivery techniques and coordination that made the Marine Phantoms so important so early in the long war.

A dozen Marine Corps squadrons flew the Phantom in Vietnam, and this book describes each unit's experiences, often involving many tours. The more well-known squadrons like VMFA-115 and VMFA-232 share space with lesser-known units such as VMFA-314, VMFA-334, and VMFA-122. Being less well known certainly doesn't mean these squadrons had less action. Marine Phantom squadrons lost quite a few aircraft and crewmen, several of whom ended up as prisoners of war.

The Marines were great weapon developers—one unit loaded their aircraft with no less than three gun pods to augment their mount's prodigious bomb and rocket loads. Orbiting over the battlefield, Phantoms could be the answer to a harried forward air controller's prayer. When the situation was right, the gray, beat-up, and weathered F-4s from Da Nang and Chu Lai could mean the difference between victory or defeat when mud Marines were engaging the enemy.

Also included is perhaps the most detailed account of the special war of the "photo-Phantom." The RF-4B was one of the few truly dedicated reconnaissance platforms flown in Vietnam. The Navy and Marine Corps' RF-8A/G Crusader, the Navy's RA-5C Vigilante and RA-3B Skywarrior, and the Air Force's RF-4C and RF-101A/C Voodoo were all high-performers throughout the war. The RF-4B, which was only flown by the Marines, was a very special type, and could do most anything that was asked of it in the area of gathering photographic, infrared, and electronic imagery intelligence. Little has been written about the RF-4B. Together with Jim Laurier's color profiles, it is a real window into this rarely displayed world.

This latest addition to Osprey's Combat Aircraft series (no. 94) is arguably one of the best.



# PEOPLE—PLACES—PLANES

Edited by Josh Phillips



F/A-18C Hornets assigned to the VFA-83 Rampagers sit on the flight deck of USS Dwight D. Eisenhower (CVN 69) on 13 June. (Photo by Lt. Greg Linderman)

## On the Move

The *John C. Stennis* Carrier Strike Group returned to San Diego on 29 April, marking the end of deployment for CVW-9, the HSM-71 Raptors, the HSC-8 Eightballers, and USS *Mobile Bay* (CG 53) to the 5<sup>th</sup> and 7<sup>th</sup> Fleet areas of responsibility (AOR).

USS *Nimitz* (CVN 68) arrived in the Sea of Japan on 13 May to participate in a joint naval drill with the Republic of Korea Navy.

The VP-10 Red Lancers and the VP-45 Pelicans returned to NAS Jacksonville, Fla., on 6 June from their deployment to the 4<sup>th</sup> and 7<sup>th</sup> Fleet AOR.

The HMH-772 Hustlers and the VMFA-112 Cowboys departed the United States in early June for a six-month deployment to Okinawa, Japan.

USS *Bonhomme Richard* (LHD 6) embarked elements of the 31<sup>st</sup> Marine Expeditionary Unit's (MEU) aviation combat element on 24 June in the East China Sea.

CVW-7 returned to NAS Oceana and NS Norfolk Chambers Field on 2 July after a four-month deployment aboard USS *Dwight D. Eisenhower* (CVN 69).

## Milestones

Six MV-22B Ospreys and two KC-130Js flew from MCAS New River, N.C., to Moron De La Frontera, Spain, on 27 April, completing the longest and largest transatlantic flight of any Osprey squadron to date.

The HSM-35 Magicians became the first composite expeditionary helicopter squadron to include both the MH-60R Seahawk and the MQ-8B Fire Scout on 3 May at NAS North Island.

HMX-1 hosted a MV-22B introduction ceremony on 4 May, marking the beginning of HMX-1's transition from CH-46E Sea Knights to MV-22B Ospreys for green-side and presidential support flights.

The MQ-4C Triton unmanned aircraft system completed its first flight from Palmdale, Calif., on 22 May, marking the start of tests to validate the system for future fleet operations.

The P-8A Poseidon was declared ready for fleet introduction on 1 July

## Awards

Five Marines were awarded the Navy and Marine Corps Medal at Camp Lejeune, N.C., on 3 June for their actions after one of the 24<sup>th</sup> MEU's aircraft crashed during a bilateral training event in Morocco on 11 April 2012.

ABE1 (AW/SW) Luis Martinez, a Sailor aboard USS *George Washington* (CVN 73), received the Pacific Fleet 2013 Aviation Boatswain's Mate of the Year award.

## Change of Command

Cmdr. Jeremy Andrew relieved Cmdr. Chad Vincelette as commanding officer of the VFA-32 Fighting Swordsman on 17 January aboard USS *Harry S Truman* CVN 75).

Lt. Col. John Neville relieved Cmdr. William McConvey as commanding officer of HX-21 at NAS Patuxent River on 26 April.

Col. James T. Jenkins relieved Col. Scott S. Jensen as commanding officer of MAG-29 on 3 May at MCAS New River.



An X-47B Unmanned Combat Air System demonstrator is loaded onto the flight deck of USS George H.W. Bush (CVN 77) for its initial carrier launch on 6 May off the coast of Virginia. (Photo by MC3 Kevin J. Steinberg)

Cmdr. Clarke F. Craine relieved Cmdr. Marc J. Miguez as commanding officer of the VFA-213 Blacklions on May 9 at NAS Oceana.

Lt. Col. Willie Stansell relieved Lt. Col. Bill Gray as commanding officer of the MALS-31 Stingers at MCAS Beaufort on 10 May.

Cmdr. Clayborne Beers was relieved as commanding officer of the VFA-105 Gunslingers by Cmdr. Forrest Young on 16 May at NAS Oceana.

Capt. Gregory S. Pekari relieved Capt. Scott C. Kraverath as Commander, U.S. Naval Activities Spain and Commanding Officer at NS Rota, Spain, on 16 May.

Cmdr. Lonnie L. Fields Jr. relieved Cmdr. Clint Smith as commanding officer of the VQ-3 Ironmen on 17 May at Tinker AFB, Okla.

Lt. Col. Brett A. Hart relieved Lt. Col. Stephen C. Augustin as commanding officer of the VMMT-204 Raptors at MCAS New River on 30 May.

Col. Hunter H. Hobson relieved Col. Christopher J. Mahoney as commanding officer of MAG-12 on 31 May at MCAS Iwakuni, Japan.

Lt. Col. Thomas P. Mitalski relinquished command of the VMM-263 Thunder Chickens to Lt. Col. Sam C.

Schoolfield aboard MCAS New River on 6 June.

Cmdr. David S. Dull relieved Cmdr. Kumar Atarathi as commanding officer of the VAW-113 Black Eagles on 14 June.

Cmdr. Jesse Hilliker relieved Cmdr. Bobby Markovich as commanding officer of the VFA-83 Rampagers aboard *Dwight D. Eisenhower* on 17 June.

Lt. Col. Shawn Budd relieved Lt. Col. Michael Tyson as commanding officer of MWHs-3 on 21 June at MCAS Miramar, Calif.

Cmdr. Matthew Collins relieved Cmdr. James Bates as commanding officer of the VFA-2 Bounty Hunters on 27 June over NAS Lemoore.

Capt. Monty G. Ashliman relieved Capt. Eric H. Venema as commanding officer of NAS Lemoore on 28 June.

Lt. Col. Alfredo DuBois relieved Lt. Col. Patrick R. Hittle as commanding officer of the MWSS-272 Untouchables at MCAS New River on 28 June

Cmdr. John DePree relieved Cmdr. James Christie as commanding officer of the VFA-154 Black Knights on 4 July aboard *Nimitz*.

Cmdr. Eric Tidwell relieved Cmdr. Layne McDowell as commanding officer of the VFA-41 Black Aces on 10 July

Cmdr. Joseph T. Kemp relieved Cmdr. Stuart M. Mattfield as commanding officer of TACRON-22 on 11 July at Virginia Beach, Va.

Capt. Stuart P. Baker relieved Capt. Dell D. Bull as commanding officer of CVW-9 at NAS Lemoore on 12 July.



Sailors salute the national ensign during morning colors aboard USS Blue Ridge (LCC 19) on 16 June from Jakarta, Indonesia. (Photo by MC3 Jared Harral)





Marines from the 26<sup>th</sup> MEU fast rope from a CH-53E Super Stallion to the flight deck of USS Kearsarge (LHD 3) on 30 June.  
(Photo by MC2 Corbin J. Shea)

Cmdr. Nick Good relieved Cmdr. J. Dan Hughes as commanding officer of the VFA-15 Valions on 18 July at NAS Oceana.

Capt. Lance G. Scott relieved Capt. Christopher P. Ramsden as commanding officer of CPRW-2 on 18 July at MCB Hawaii.

Cmdr. Eddie Pilcher relieved Cmdr. Robert F. Coogan as commanding officer of the VR-1 Star Lifters at NAF Washington, Joint Base Andrews, Md., on 27 July.



AM3 Aryeh Samuel cleans the skin of an F/A-18F Super Hornet from the VFA-102 Diamondbacks aboard USS George Washington (CVN 73) on 30 June.  
(Photo by MC3 Erin Devenberg)

## Scan Pattern

The Department of Defense POW/Missing Personnel Office announced on 30 April that a Navy pilot missing from the Vietnam War has been accounted for and will be buried with full military honors along with his crew. Navy Lt. Dennis W. Peterson was the pilot of an SH-3A helicopter that crashed in Ha Nam Province, North Vietnam.

A crew from the VR-62 Nomads helped rescue a boat and five people who were adrift and lost at sea in late May off the coast of Chuuk Atoll, Micronesia.



ABM2 Erik Diedrich signals to an AV-8B Harrier with the VMA-223 Bulldogs as another Harrier prepares to land on the flight deck of USS Wasp (LHD 1) on 24 June.  
(Photo by MC1 Gretchen Albrecht)

The HSC-3 Merlins surpassed 250,000 Class A mishap-free flight hours on 14 June at NAS North Island.

Bonhomme Richard embarked four MV-22 Osprey tilt-rotor aircraft from VMM-263 for their maiden forward deployed naval forces deployment on 14 June.

## Establishments, Disestablishments, and Redesignations

The HSL-51 Warlords were redesignated as HSM-51 on 7 March at NAF Atsugui.

After nearly seven decades of service, the VMA-513 Flying Nightmares wrapped up their final mission on June and were disestablished at MCAS Yuma on 12 July.

The VMAQ-1 Banshees became VMAQT-1 during a redesignation ceremony aboard MCAS Cherry Point on 21 June.

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## Squadron Spotlight

**GROUP/SQUADRON NAME:** Fleet Logistics Support Squadron (VR) 1 Star Lifters

**DATE ESTABLISHED:** 9 March 1942

**BASED OUT OF:** Naval Air Facility (NAF) Washington, Joint Base Andrews

**CURRENT COMMANDING OFFICER:** Cmdr. Eddie Pilcher

**MISSION:** Provide safe, reliable, and effective on-demand senior leader airlift to the Department of the Navy through the Secretary of the Navy's service secretary-controlled aircraft.

**BRIEF HISTORY:** VR-1 was commissioned to provide executive air transport using DC-3 aircraft. The Star Lifters began with just four officers and 22 enlisted, tasked exclusively to the Chief of Naval Operations (CNO). By 1960, the squadron had grown to more than 40 Sailors and was assigned all executive air transportation missions for the Washington, D.C., area. In 1980, the Star Lifters acquired the C-27 LearJet aircraft, considered one of the most modern aircraft of its time.

Today, VR-1 supports international travel for the Navy's senior leaders, foreign dignitaries, congressional delegations, and others such as the Secretary of the Navy, Chief of Naval Operations, and the Commandant of the Marine Corps. Responsible for on-demand Navy executive air travel to any location worldwide, the squadron operates two Gulfstream IIIs (C-20D) and three Gulfstream 550s



(C-37B). The Gulfstream 550 is capable of flying non-stop from Tokyo, Japan, to Washington, D.C., in less than 14 hours.

VR-1 is a hybrid squadron in virtually every aspect and accomplishes its mission with civilian contractors performing maintenance, while fulfilling its mission requirements with an integrated team of Navy and Marine Corps personnel.

**AIRCRAFT FLOWN:** C-37B and C-20D

**NUMBER OF PEOPLE IN UNIT:** 79 (64 Sailors, 14 Marines, and 32 civilians)

### SIGNIFICANT MOMENTS/ACCOMPLISHMENTS:

In 2012, VR-1 accomplished critical, high-profile missions with a 100-percent completion rate. This achievement was attained while executing 3,240.1 mishap-free flight hours, despite operating with one less asset for the entire year because of depot-level maintenance requirements. VR-1 was also awarded the Gulfstream Alber-Rowley Trophy, which is the outstanding flight award for the Gulfstream Aerospace Corporation.

The Star Lifters have played a pivotal role in overseas contingency operations. From 2001 to today, VR-1 has flown an average of 20 missions into and out of critical combat areas. In 2007, VR-1 detached to Al Udeid Air Base, Qatar, flying over 320 combat area hours while supporting Central Command's deputy commander. VR-1 also executed the first Fleet Logistics Support Wing det. to Kabul, Afghanistan. This four-month det. supported Commander, International Security Assistance Force, culminating in more than 386 combat area flight hours.



(Photo by MC2 Kenneth Abbate)

If you are interested in being featured in upcoming Squadron Spotlights, please contact us at [nannews@navy.mil](mailto:nannews@navy.mil).



